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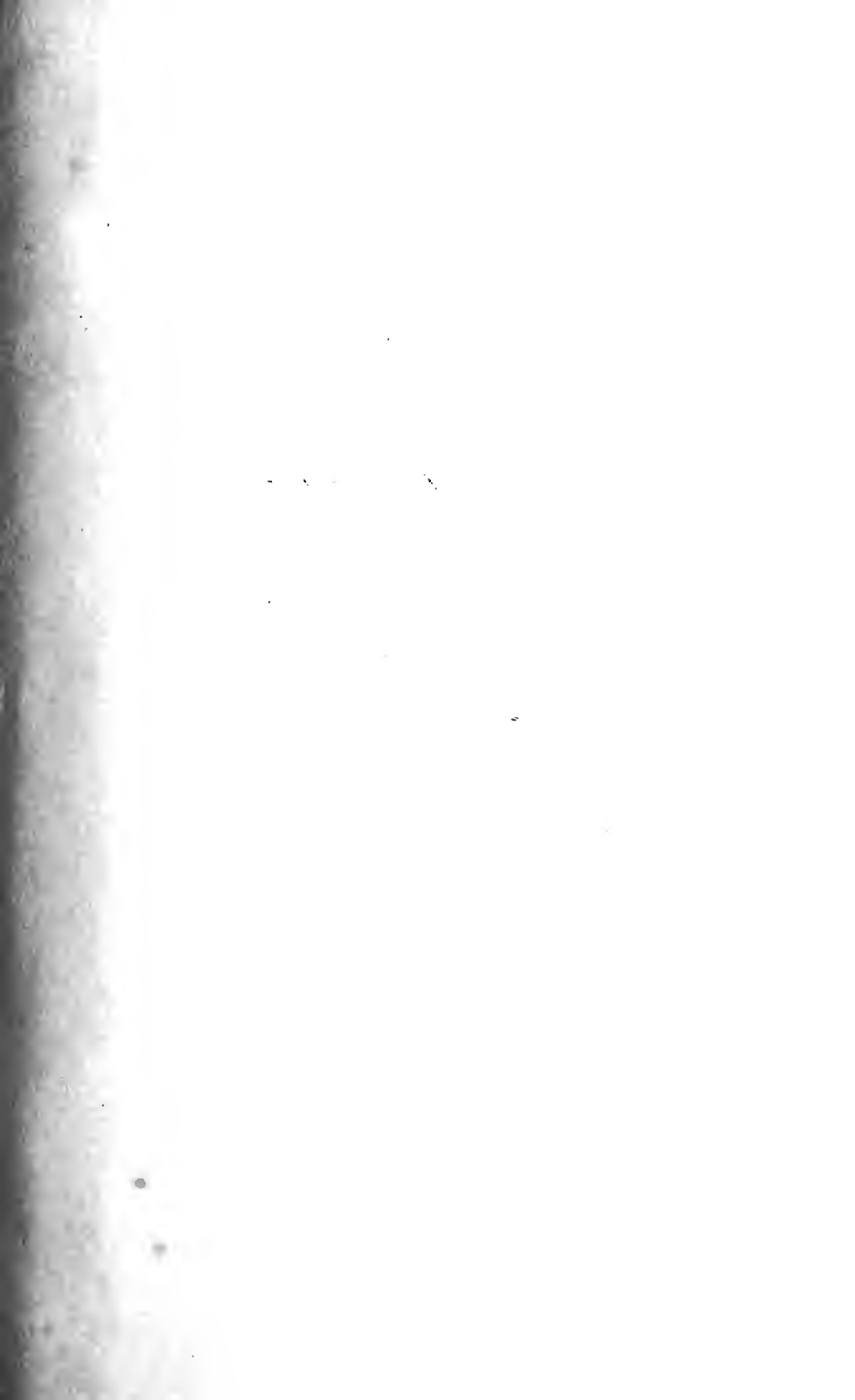
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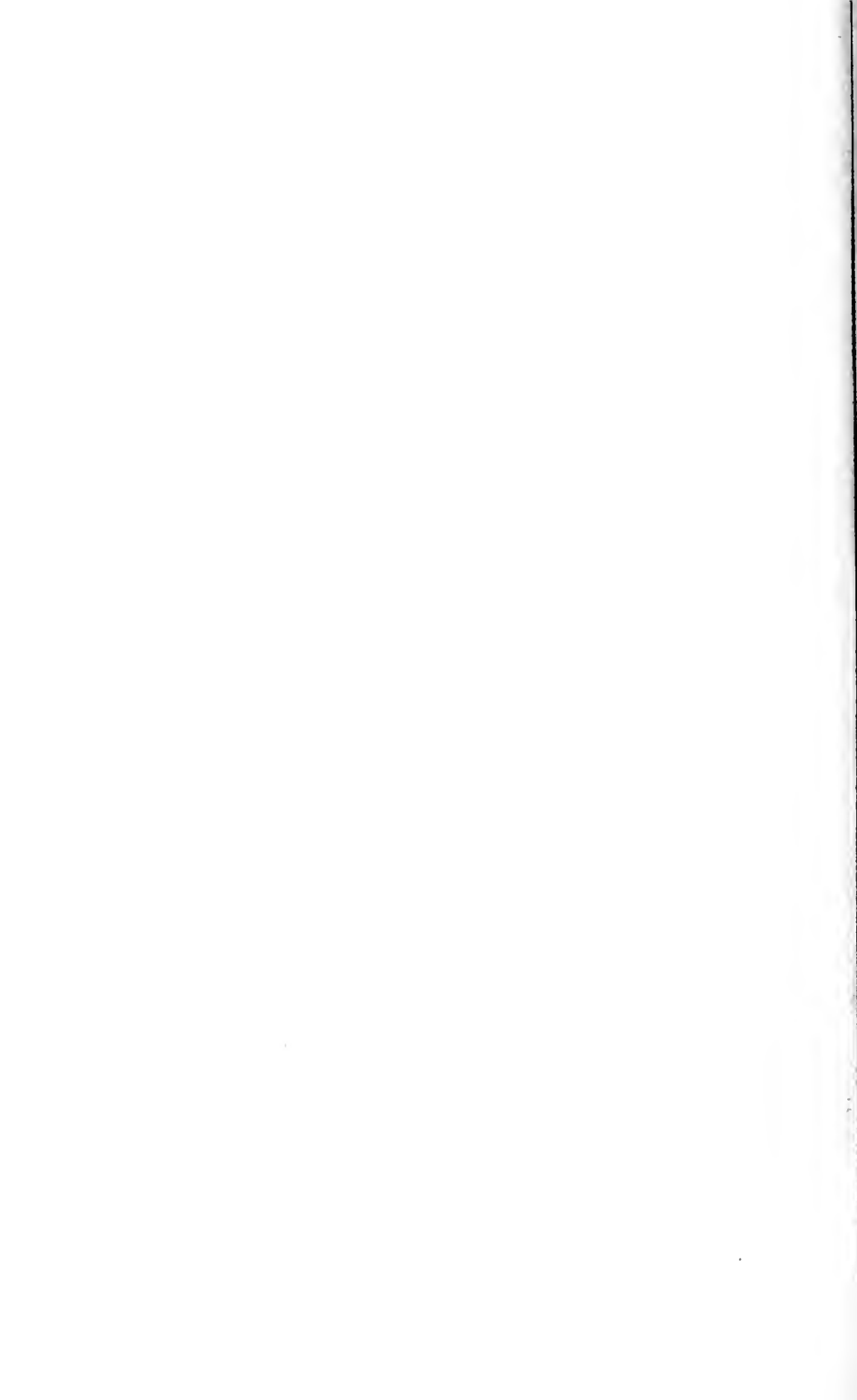
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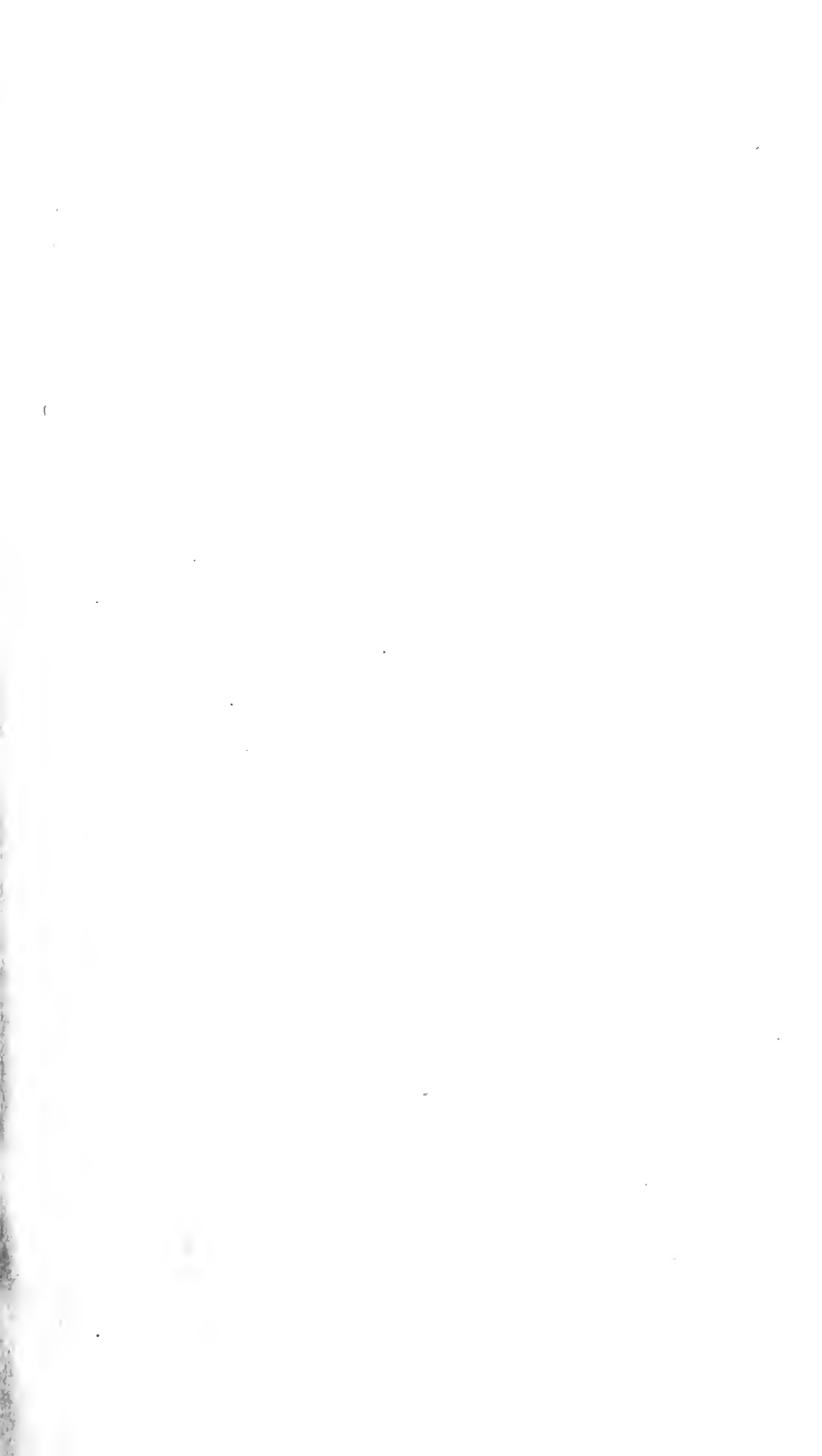
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224
No. 12485

**United States
Court of Appeals**
for the Ninth Circuit.

LeROY J. LEISHMAN,

Appellant.

vs.

GENERAL MOTORS CORPORATION,

Appellee.

**Transcript of Record
In Four Volumes
Volume I
(Pages 1 to 328)**

**Appeal from the United States District Court,
Southern District of California,
Central Division.**

FILED
AUG 4 1950

PAUL P. O'BRIEN,

CLERK

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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in *italic*; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in *italic* the two words between which the omission seems to occur.]

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Los Angeles 17, Calif.

In the United States District Court, Southern District of California, Central Division.

Declaratory Judgment Suit on Leishman
Reissue Patent No. Re. 20,827

Civil Action No. 5781-Y

GENERAL MOTORS CORPORATION, a corporation,

Plaintiff,

vs.

LeROY J. LEISHMAN,

Defendant.

COMPLAINT

Comes now the plaintiff and for cause of action against defendant alleges as follows:

I.

Plaintiff General Motors Corporation is a corporation organized and existing under and by virtue of the laws of the State of Delaware, and having its principal place of business at Detroit, in the State of Michigan.

II.

Defendant LeRoy J. Leishman is a citizen, resident, and inhabitant of the State of California, residing in the City of Los Angeles and within the Southern District of California, Central Division.

III.

This is a suit for declaratory relief, and the jurisdiction of the court depends upon the Declaratory Relief Act, Judicial Code § 274-d, 28 U.S.C.A. § 400, and the patent laws of the United States. [2*]

IV.

This action arises out of a controversy over the question of validity and infringement of the United States Reissue Letters Patent No. 20,827 of the Defendant, LeRoy J. Leishman, granted August 16, 1938, on "Means and Method for Turning Rotatable Objects to Predetermined Positions."

V.

This action arises because there is an actual controversy now existing between the parties in respect of which Plaintiff needs a declaration of its rights by this Court, in that:

(a) Plaintiff has been, is now and intends to continue to be engaged in the manufacture and sale of radio tuners (incorporated in radio receiving sets), as exemplified by the specimen marked "Exhibit 1" filed herewith and made a part hereof.

(b) Plaintiff has manufactured and intends to manufacture and sell radio tuners (incorporated in radio receiving sets), as exemplified by the speci-

men marked "Exhibit 2" herewith and made a part hereof.

(c) Defendant has asserted and is asserting that said Patent No. Re. 20827 is valid, and that Claims 7, 8, 9, 10, and 11 of said patent are of such scope as to render the aforesaid tuners, "Exhibits 1 and 2," infringements thereof.

(d) Defendant has attempted and is attempting to bring within the scope of his asserted patent monopoly all tuners similar to the aforesaid tuners, "Exhibits 1 and 2" manufactured and sold by Plaintiff; as a part of a planned campaign to that effect against the entire tuner industry:

1. On or about September 12, 1938, Defendant filed a complaint for the alleged infringement of Claims 7, 8, 9, 10, and 11 of Reissue Letters Patent No. Re. 20,827 against the Associated Wholesale Electric Co., in this District, Civil Action No. 1463-J; that in such case Defendant asserted that a radio tuner [3] manufactured by The Crosley Corporation, of Cincinnati, Ohio, a drawing of which is attached hereto marked Exhibit 3 and made a part hereof, constituted an infringement of the aforesaid claims.

2. On or about April 27, 1939, defendant filed a complaint for the alleged infringement of Claims 7, 8, 9, 10, and 11 of Reissue Letters Patent No. Re. 20,827 against Watson & Wilson, Inc., in this district, Civil Action No. 375-M; that in such case

defendant asserted a scope for the aforesaid claims which would render plaintiff's tuners, Exhibits 1 and 2, infringements of such claims.

3. On or about March, 1945, defendant filed a complaint for the alleged infringement of Claims 7, 8, 9, 10, and 11 of Reissue Letters Patent No. Re. 20,827 against The Richards and Conover Company, in the United States District Court for the Western District of Oklahoma, Civil Action No. 2155; that in such case defendant has asserted, and is still asserting, that radio tuners manufactured by the Radio Condenser Company and General Instrument Corporation, drawings of which are attached hereto marked Exhibits 4 and 5, respectively, and made a part hereof, constituted an infringement of the aforesaid claims.

4. On or about April 20, 1945, a complaint was filed for declaratory relief by Radio Condenser Company and General Instrument Corporation against defendant LeRoy J. Leishman, praying a declaration that Claims 7, 8, 9, 10, and 11 of said Reissue Letters Patent No. Re 20,827 be held invalid and not infringed by tuners manufactured by said Radio Condenser Company and General Instrument Corporation, drawings of which are hereinabove identified as Exhibits 4 and 5, respectively; that in such [4] case defendant has asserted, and is continuing to assert, that these tuners, Exhibits 4 and 5, infringe Claims 7, 8, 9, 10, and 11 of Reissue Letters Patent No. Re. 20,827.

VI.

The tuner manufactured by plaintiff and marked Exhibit 2 in this action, in so far as the subject matter of claims 7, 8, 9, 10, and 11 of Reissue Letters Patent No. Re. 20,827 is concerned, is the same as the tuner shown in the drawing marked Exhibit 3, the tuner shown in the drawing Marked Exhibit 4, and the tuner shown in the drawing marked Exhibit 5.

VII.

Plaintiff, in manufacturing and selling its tuners, has not, and is not, infringing said Reissue Letters Patent No. Re. 20,827.

VIII.

United States Reissue Letters Patent No. Re. 20,827 and the claims thereof are invalid and void on the following grounds:

(1) Because the alleged invention or discovery described and claimed in said Reissue Letters Patent No. Re. 20,827, and all material and substantial parts thereof had been, prior to the alleged invention or discovery thereof by the said LeRoy J. Leishman, or more than two years before the date of his original application for a patent therefor, patented or described or shown in the following Letters Patent of the United States and foreign countries:

United States Patent

Patent No.	Date	Inventor
290,894.....	December 25, 1883.....	Kettel
368,689.....	August 23, 1887.....	Seales
585,996.....	July 6, 1897.....	Woodbridge
1,687,420.....	October 9, 1928.....	Bast
1,704,754.....	March 12, 1929.....	Marvin
1,906,106.....	April 25, 1933.....	Schaefer
1,930,192.....	October 10, 1933.....	Cunningham
1,948,373.....	February 20, 1934.....	Flaherty
2,014,358.....	September 10, 1935.....	Miller
2,072,897.....	March 9, 1937.....	Marschalk

British Patent

405,716.....	February 15, 1934.....	Freytag
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and also other Letters Patent of the United States and foreign countries unknown to the plaintiff at this time but which, when known, plaintiff prays leave to insert by proper amendment in the complaint.

(2) Because the alleged invention purported to be patented by said Reissue Letters Patent No. Re. 20,827 did not constitute or contain patentable novelty or patentable invention within the meaning of the patent laws, in view of what was common knowledge and in view of the state of the art as it existed prior to the alleged invention or discovery of said alleged invention by the applicant, LeRoy J. Leishman, for said Reissue Letters Patent, or more than two years prior to his application for the original Letters Patent therefor, which state of the art is evidenced by the United States and foreign Letters Patent set forth in clause (1) hereof and by such other parts of the state of the art which plaintiff is ready to prove.

(3) Because the said Reissue Letters Patent No. Re. 20,827 is for a different invention from that disclosed and claimed in the original Letters Patent No. 2,108,538 of which it is a reissue. [6]

(4) Because the applicant, LeRoy J. Leishman, for said Reissue Letters Patent was not the first and/or original inventor or discoverer of the thing or things purported to be covered by said Reissue Letters Patent, of or any material or substantial part thereof, but the same thing or things, and all material and essential features, prior to the alleged invention or discovery thereof by Leishman, or for more than two years prior to the date of his original application for a patent therefor, had been invented by (if there be any patentable invention described and claimed in said Reissue Letters Patent) or known to and in public use by or on sale by the applicants for the United States Letters Patent set forth in clause (1) of this paragraph, residing at the residences stated in said patents, at said places of residence and elsewhere in the United States, and by others whose names and addresses, together with the place of knowledge, use, or sale, when ascertained, plaintiff prays leave to insert by amendment or otherwise.

(5) Because the purported disclaimer entered by defendant on November 10, 1939, to claims 8, 9 and 10 of said United States Reissue Letters Patent No. Re. 20,827 was and is invalid and improper in that by said disclaimer defendant sought to transform the combination purported to be cov-

ered by said claims prior to the entry of said disclaimer to a new and different combination.

Wherefore, Plaintiff Prays:

1. That this court decree that plaintiff has not infringed United States Reissue Letters Patent No. Re. 20,827; [7]

2. That this court decree that United States Reissue Letters Patent No. Re. 20,827 is invalid and void;

3. That by way of further relief, the Court grant a preliminary and final injunction against the Defendant, his agents and representatives, from representing to the trade, and particularly to Plaintiff's customers, that tuners manufactured and sold by Plaintiff are infringements of said United States Reissue Letters Patent No. Re. 20,827;

4. That Plaintiff be awarded its costs in this action;

5. That Plaintiff have such other and further relief as in equity and good conscience the Court may deem proper.

GENERAL MOTORS
CORPORATION,

By /s/ C. L. McCUEN,
Vice President.

/s/ LEONARD S. LYON,

/s/ LEONARD S. LYON, JR.,

Attorneys for Plaintiffs. [8]

State of Michigan,
County of Wayne—ss.

C. L. McCuen being first duly sworn, deposes and says:

That he is the Vice President of General Motors Corporation, the Plaintiff above named; that he has read the foregoing Complaint signed by him on behalf of said Plaintiff, General Motors Corporation, and knows the contents thereof and that the same are true except as to matters set forth upon information and belief, and as to such matters he verily beleives them to be true.

/s/ C. L. McCUEN.

Subscribed and sworn to before me this 16th day of September, 1946.

[Seal] /s/ FRED E. JONES,

Notary Public in and for the County of Wayne,
State of Michigan.

My Commission Expires March 18, 1950. [9]



EXHIBIT NO. 3
(Attached to Complaint)

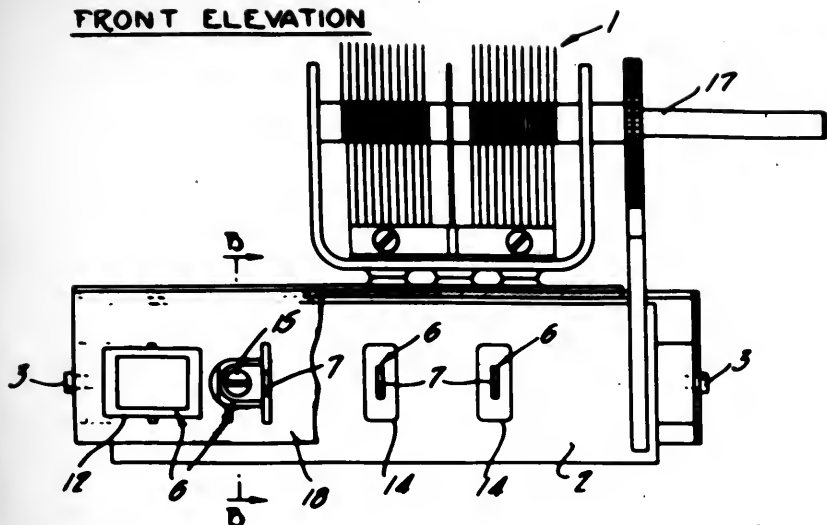
PLAINTIFF'S EXHIBIT NO. 12
(Admitted June 2, 1948)

- 1 - Radio apparatus tuning condenser**
- 2 - Rotatable rocker mounted upon a shaft 3 and operatively connected with tuning condenser 1**
- 4, 5 - Arms or shoulders of rotatable rocker 2, each extending on a different side of shaft 3**
- 6 - Manually movable operating means for rocker 2, including bar 7.**
- 8 - Positioning element in the form of a means adjustably movable about a pivot 9 carried by bar 7, this means having two ends 10 and 11, one of which engages one of the arms 4, 5 of rocker 2, when bar 7 is pushed inwardly or toward the left (See B-B) by means of push button 12. Bar 7 passes through rocker 2.**
- 13 - Spring holding operating means 6 in the inoperative position of Sec B-B.**

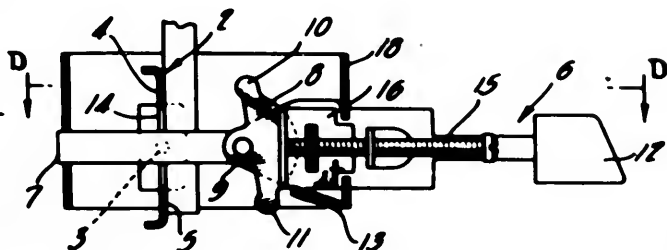
In section C-C, when operating means 6 is pushed to the limit of its movement, pivot 9 is substantially coaxial with rocker 2, there being a recess 14 in rocker 2 between arms 4, 5 to make this possible.
- 15 - Screw, operable from the external end of member 6 for holding positioning element 8 in adjusted position by the aid of clamp 16**

A plurality of operating means 6 is provided for rotating shaft 17 of tuning condenser 1 to a predetermined position, by any one of said means 6
- 18 - Cover panel for the mechanism, through which screws 18 extend.**

FRONT ELEVATION

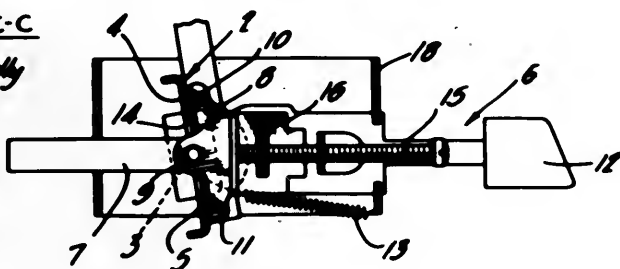


SECTION B-B

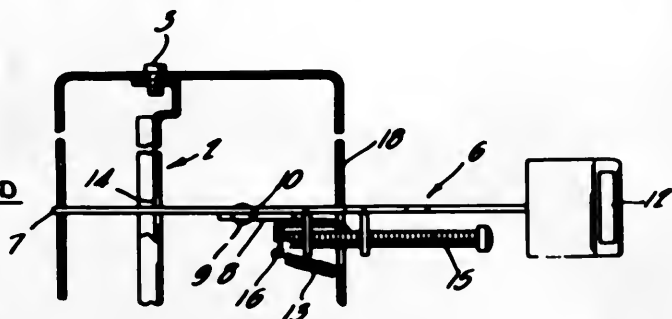


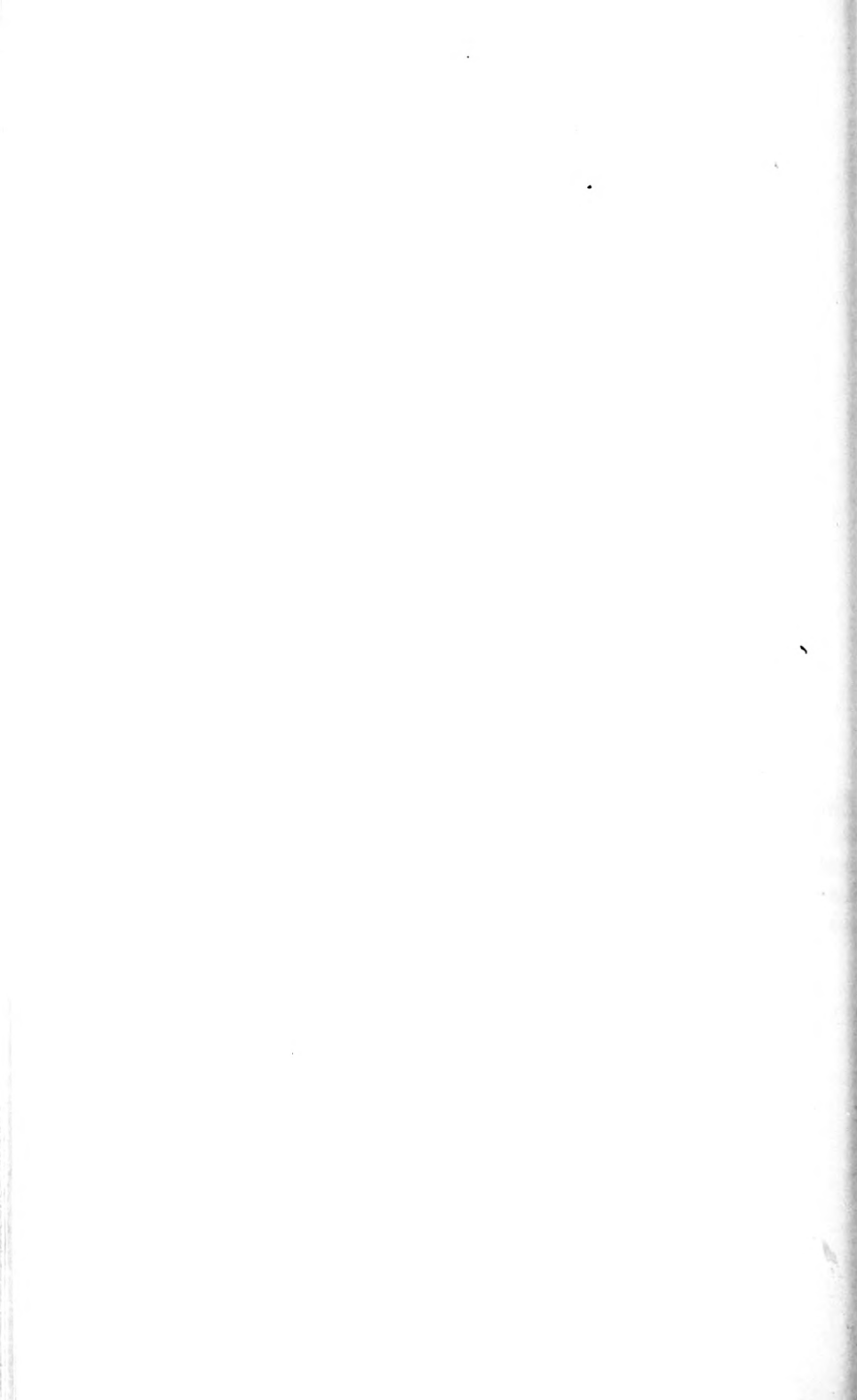
SECTION C-C

Taken on substantially
the same plane as
section B-B, but
illustrating adjusting
operation



SECTION D-D





RADIO CONDENSER COMPANY
CONDENSER AND TUNER
MODEL 28

EXHIBIT NO. 4
attached to Complaint)

INTELLIGENCE EXHIBIT NO. 13
submitted June 2, 1948)

- 1 - Radio apparatus tuning condenser
- 2 - Rotatable rocker mounted upon a shaft 3 and operatively connected with tuning condenser 1
- 4, 5 - Arms or shoulders of rotatable rocker 2, each extending on a different side of shaft 3
- 6 - Plungers for rocker 2, including bar 7
- 8 - Tappet movable about a pivot 9 carried by bar 7, having two ends 10 and 11, one of which engages one of the arms 4, 5 of rocker 2, when bar 7 is pushed inwardly or toward the left (See B-B) by means of push button 12. Bar 7 passes through rocker 2, and through recess 14 in the rocker

- 13 - Spring for plunger 6.

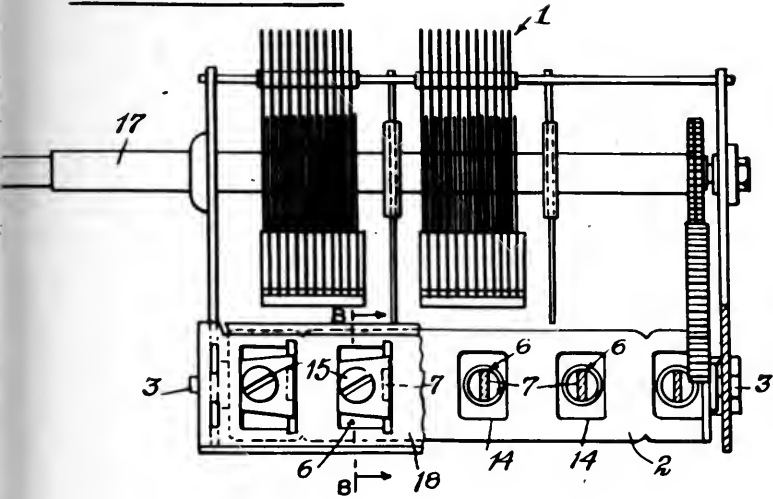
In section C-C, when plunger 6 is pushed to the limit of its movement, pivot 9 is substantially coaxial with rocker 2.

- 15 - Screw for holding tappet 8 in adjusted position by the aid of clamp 16

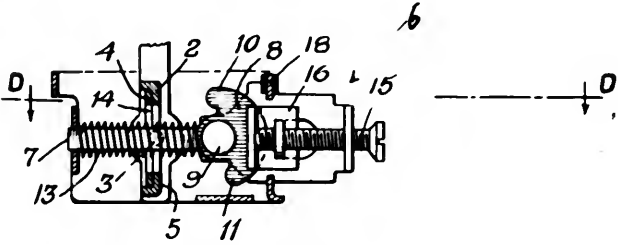
A plurality of plungers 6 is provided for rotating shaft 17 of tuning condenser 1 to a predetermined position, by any one of said plungers 6

- 16 - Cover panel for the mechanism, through which screws 15 extend.

FRONT ELEVATION

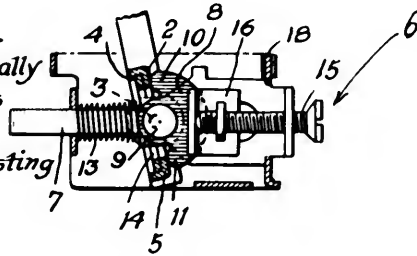


SECTION B-B

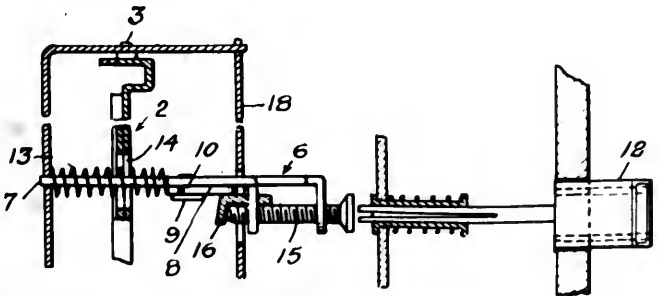


SECTION C-C

ten on substantially
same plane as
tion B-B, but
illustrating adjusting
operation



SECTION D-D



GENERAL INSTRUMENT CORPORATION
CONDENSER AND TUNER
MODEL 31

EXHIBIT NO. 5
(Attached to Complaint)

PLAINTIFF'S EXHIBIT NO. 14
(Admitted June 2, 1948)

- 1 - Radio apparatus tuning condenser
- 2 - Rotatable rocker mounted upon a shaft 3 and operating connected with tuning condenser 1
- 4, 5 - Arms or shoulders of rotatable rocker 2, each extending on a different side of shaft 3
- 6 - Plungers for rocker 2, including bar 7
- 8 - Tappet movable about a pivot 9 carried by bar 7, has two ends 10 and 11, one of which engages one of the arms 4, 5 of rocker 2, when bar 7 is pushed inwardly or toward the left (See B-B) by means of push button. Bar 7 passes through rocker 2, and through recess 12 in the rocker
- 13 - Spring for plunger 6.

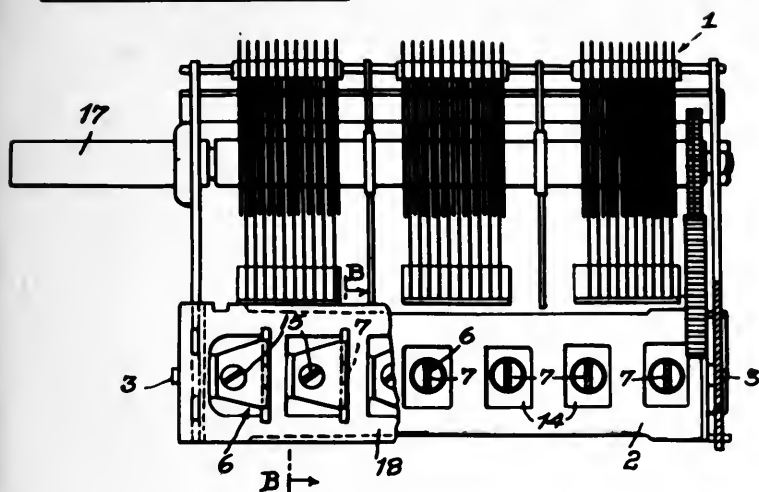
In section C-C, when plunger 6 is pushed to the limit of its movement, pivot 9 is substantially coaxial with rocker 2.
- 15 - Screw for holding tappet 8 in adjusted position by aid of clamp 16

A plurality of plungers 6 is provided for rotating shaft 17 of tuning condenser 1 to a predetermined position, by any one of said plungers 6
- 16 - Cover panel for the mechanism, through which screws extend.

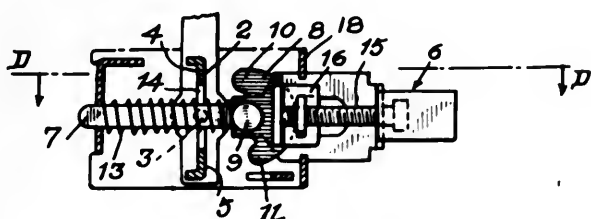
Exhibit 5

Enclosed : Filed Sept. 20, 1948.

FRONT ELEVATION

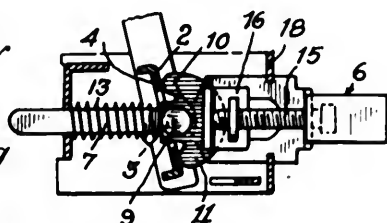


SECTION B-B

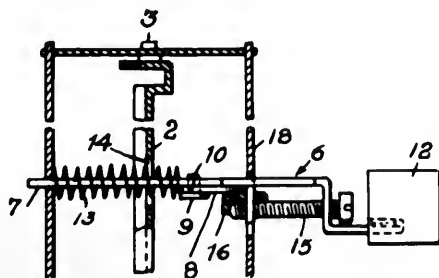


SECTION C-C

on Substantially
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SECTION D-D



[Title of District Court and Cause.]

COUNTERCLAIM OF DEFENDANT

The defendant complains of the plaintiff and alleges:

I.

Plaintiff

Plaintiff General Motors Corporation is a corporation organized and existing under and by virtue of the laws of the State of Delaware, and having its principal place of business at Detroit, in the State of Michigan. The plaintiff also has a place of business in Los Angeles, California.

II.

Defendant

Defendant LeRoy J. Leishman is a citizen, resident and inhabitant of the State of California, residing in the City of Los Angeles and within the Southern District of California, Central Division.

III.

Jurisdiction

(1) That the jurisdiction of this Court is based upon the Patent Laws of the United States of America.

(2) That the acts of infringement hereinafter complained of were and are being committed in the Southern District of California, Central Division, and elsewhere within the United States.

(3) Independent of the fact that the plaintiff has a place of business within this District and Division, the plaintiff has voluntarily brought itself within the jurisdiction of this court by filing a declaratory judgment action (No. 5781-Y) against the defendant.

IV.

Title to Patents

(1) On February 15, 1938, original United States Letters Patent No. 2,108,538, were duly and legally issued to defendant for an invention in "Means and Method for Turning Rotatable Objects to Predetermined Position," and on August 16, 1938, said Letters Patent were surrendered, and were duly and legally reissued as reissue Letters Patent No. Re. 20,827; and on or about January 16, 1939, the defendant disclaimed claim 5 of said reissue Letters Patent No. Re. 20,827.

(2) Defendant, since the date of the issuance of said original Letters Patent and until said original Letters Patent were surrendered, has been the owner of said original Letters Patent, and defendant, since the date when said reissue Letters Patent were granted, has been and still is the owner of said reissue Letters Patent.

V.

Infringement

That the plaintiff has, within the last six years and prior to the filing of the complaint, and subse-

quent to the date of granting of reissue Letters Patent No. Re. 20827, infringed claims 7, 8, 9, 10 and 11 thereof; and the plaintiff threatens [14] to continue so as to infringe by making or causing to be made, or selling or causing to be sold, or using or causing to be used within this district and elsewhere within the United States, automatic tuning mechanisms embodying the inventions disclosed and claimed in defendant's said reissue Letters Patent, wilfully and without the consent of the defendant.

VI.

Damages

That the plaintiff has derived unlawful gains and profits from such infringement which defendant would otherwise have received but for such infringement, and has thereby been caused irreparable damages.

Defendant Therefore Prays:

1. For a judgment from this Court that claims 7, 8, 9, 10 and 11 of United States Letters Patent No. Re. 20,827, are valid.

2. For a judgment from this Court that the plaintiff has infringed claims 7 to 11, inclusive, of the said reissue patent.

3. For a preliminary as well as a permanent injunction restraining the plaintiff, its officers, agent, servants, and employees from directly or indirectly making or causing to be made, selling or

causing to be sold, or using or causing to be used, any automatic tuning mechanisms embodying the inventions claimed in the said reissue Letters Patent No. Re. 20,827, or from infringing upon or violating the said Letters Patent in any way whatsoever.

4. For the costs and an accounting of profits and damages.

5. For a dismissal of the complaint on the ground that no proper basis for declaratory relief exists. [15]

6. For such other and further relief as the Court may deem meet and just.

/s/ LeROY J. LEISHMAN,
Defendant.

Dated, this 19th day of November, 1946, Los Angeles, California.

Affidavit of Service by Mail attached.

[Endorsed]: Filed Nov. 19, 1946. [16]

[Title of District Court and Cause.]

PLAINTIFF'S REPLY TO DEFENDANT'S
COUNTERCLAIM

Now Comes the Plaintiff and in reply to the Counterclaim filed by Defendant alleges as follows:

I.

In reply to Paragraph I of said Counterclaim, Plaintiff admits the allegations thereof.

II.

In reply to Paragraph II of said Counterclaim, Plaintiff admits the allegations thereof.

III.

In reply to Paragraph III of said Counterclaim, Plaintiff admits the allegations of sub-paragraphs (1) and (3) [21] thereunder, but specifically denies that any acts of infringement of Defendant's patent were or are being committed in the Southern District of California, Central Division, or elsewhere.

IV.

In reply to Paragraph IV of said Counterclaim, Plaintiff admits the allegations thereof.

V.

In reply to Paragraph V of said Counterclaim, Plaintiff specifically denies each and every allegation thereof.

VI.

In reply to Paragraph VI of said Counterclaim, Plaintiff specifically denies each and every allegation thereof.

For Further and Affirmative Defenses, Plaintiff Alleges:

VII.

United States Reissue Letters Patent No. Re. 20,827 and the claims thereof are invalid and void on the following grounds:

(1) Because the alleged invention or discovery described and claimed in said Reissue Letters Patent No. Re. 20,827, and all material and substantial parts thereof had been, prior to the alleged invention or discovery thereof by the said LeRoy J. Leishman, or more than two years before the date of his original application for a patent therefor, patented or described or shown in the following Letters Patent of the United States and foreign countries:

United States Patents

Patent No.	Date	Inventor
290,894.....	December 25, 1883.....	Kettel
368,689.....	August 23, 1887.....	Seales
585,996.....	July 6, 1897.....	Woodbridge
1,687,420.....	October 9, 1928.....	Bast
1,704,754.....	March 12, 1929.....	Marvin
1,906,106.....	April 25, 1933.....	Schaefer
1,930,192.....	October 10, 1933.....	Cunningham
1,948,373.....	February 20, 1934.....	Flaherty
2,014,358.....	September 10, 1935.....	Miller
2,072,897.....	March 9, 1937.....	Marschalk

British Patent

405,716.....	February 15, 1934.....	Freytag
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and also other Letters Patent of the United States and foreign countries unknown to the Plaintiff at this time but which, when known, Plaintiff prays leave to insert by proper amendment herein.

(2) Because the alleged invention purported to be patented by said Reissue Letters Patent No. Re. 20,827 did not constitute or contain patentable novelty or patentable invention within the meaning

of the patent laws, in view of what was common knowledge, and in view of the state of art as it existed prior to the alleged invention or discovery of said alleged invention by the applicant, LeRoy J. Leishman, for said Reissue Letters Patent, or more than two years prior to his application for the original Letters Patent therefor, which state of the art is evidenced by the United States and foreign Letters Patent set forth in Clause (1) hereof, and by such other parts of the state of the art which Plaintiff is ready to prove.

(3) Because the said Reissue Letters Patent No. Re. 20,827 is for a different invention from that disclosed and claimed in the original Letters Patent No. 2,108,538 of which it is a Réissue. [23]

(4) Because the applicant, LeRoy J. Leishman, for said Reissue Letters Patent was not the first and/or original inventor or discoverer of the thing or things purported to be covered by said Reissue Letters Patent, or of any material or substantial part thereof, but the same thing or things, and all material and essential features, prior to the alleged invention or discovery thereof by Leishman, or for more than two years prior to the date of his original application for a patent therefor, had been invented by (if there be any patentable invention described and claimed in said Reissue Letters Patent) or known to and in public use by or on sale by the applicants for the United States Letters Patent set forth in Clause (1) of this Paragraph, re-

siding at the residence stated in said patents, at said places of residence and elsewhere in the United States, and by others whose names and addresses, together with the place of knowledge, use, or sale, when ascertained, Plaintiff prays leave to insert by amendment or otherwise.

(5) Because the purported disclaimer entered by Defendant on November 10, 1939, to Claims 8, 9 and 10 of said United States Reissue Letters Patent No. Re. 20,827 was and is invalid and improper in that by said disclaimer Defendant sought to transform the combination purported to be covered by said claims prior to the entry of said disclaimer to a new and different combination.

Wherefore, Plaintiff prays that Defendant's Counterclaim be dismissed, and that said Defendant take nothing thereunder, and that Plaintiff have such further and additional relief as the Court may deem fit and just, including Plaintiff's costs.

GENERAL MOTORS
CORPORATION,

By /s/ LEONARD S. LYON,
By /s/ LEONARD S. LYON, JR.,
Attorneys for Plaintiff.

Affidavit of Service by Mail attached.

[Endorsed]: Filed Jan. 10, 1947. [24]

[Title of District Court and Cause.]

DEFENDANT'S ANSWER

To the Honorable the Judges of the District Court
of the United States in and for the Southern
District of California:

Defendant, for answer to Plaintiff's Complaint
in the above-entitled cause, says:

I.

Defendant admits the allegations of Paragraphs
I, II, III, IV, Va, Vb, Vc, V1, V2, V3, V4 and VI.

II.

Defendant denies the allegations of Paragraph
Vd, because such tuners are already within the
scope of defendant's Reissue Patent No. Re. 20,827.

III.

Defendant denies the allegations of Paragraph
VII, and also of Paragraph VIII in its entirety.

/s/ LeROY J. LEISHMAN,
Defendant.

Affidavit of Service by Mail attached.

[Endorsed]: Filed Feb. 20, 1947. [28]

[Title of District Court and Cause.]

MEMORANDUM OPPOSING DEFENDANT'S
MOTION FOR SUMMARY JUDGMENT

* * *

The devices complained of herein are radio receivers only and have no associated television apparatus, and thus are concerned only with a portion of the mechanism of the patent in suit.

The mechanism of the Leishman reissue patent may be readily understood from Figure 2 of the drawings of the patent in suit (Pltffs. Ex. 6). It will be seen that the mechanism of [41] the patent includes a lever F pivoted at Q. The lever F has a projection to which is pivoted a cam or tappet 61. A rocker 48 is mounted upon a shaft which is intended to be connected with the tuning shaft of a radio receiver. The position of the cam or tappet 61 on the lever F may be fixed by a friction lock actuated by a second lever 66 pivoted to the lever F and held by a set screw 72. The spring 73 normally holds the lever assembly up and out of the way.

With this apparatus, after the cam or tappet 61 has been locked in a certain position on the lever F, whenever the lever F is pressed downwardly, as by the operator's finger on the set screw 72, the cam or tappet will contact the rocker 48 and rotate the rocker to a predetermined position. If the cam or tappet has been properly set, this rotation of the rocker 48 will move the tuning shaft of the

radio receiver to the correct position for bringing in a selected radio station.

In the drawing there appears a second cam or tappet 62 which is mounted upon the lever F and is shaped to contact another rocker 54 mounted upon a shaft distinct from the shaft of the rocker 48, which second shaft is intended to be the tuning shaft of a television receiving apparatus and which is not present in plaintiff's accused tuners.

The device of the patent in suit, therefore, consists essentially of three elements; a lever adjustably mounting a tappet which is movable by the lever into contact with a rocker attached to the shaft to be positioned by a movement of the lever.

This type of mechanism has long been used in cash registers as illustrated by patent No. 585,996 to Woodbridge (Pltffs. Ex. 7) and by patent No. 2,014,358 to Miller (Pltffs. Ex. 8). The combination of the lever, tappet and rocker appears in the Woodbridge patent, as can be readily seen from Figure 10 of the patent. Levers C², C⁵ are shown connected with a tappet C³, [42] which is urged by a movement of the levers against the rocker D to turn a shaft of the cash register to a predetermined position. The same combination is found in the Miller patent, as can be seen from an examination of Figure 9 and page 2, line 14, et seq., of the patent. The mechanism of the Miller patent includes a lever 4 which moves its tappet portion 12, 13 into engagement with a rocker, including the bars 7 and 8, to turn the shaft attached to the rocker to a desired predetermined position.

Leishman was not the first to adapt this familiar mechanism to the task of turning a radio receiving set. Previous to Leishman's alleged invention, patent No. 1,906,106 to Schaefer (Pltffs. Ex. 9), issued April 25, 1933, disclosed a radio adapted to be automatically tuned by the operation of a lever employing the cash register type of mechanism. This patent will be considered more fully hereinafter.

* * *

LYON & LYON,
/s/ LEONARD S. LYON,
/s/ LEONARD S. LYON, JR.,
Attorneys for Plaintiff. [89]

[Title of District Court and Cause.]

EXHIBIT 12

Affidavit of Samuel S. Mackeown on
Behalf of Plaintiff

State of California,
County of Los Angeles—ss.

Samuel S. Mackeown, being first duly sworn, deposes and says:

* * *

The tuner disclosed by Reissue Letters Patent No. 20,827, consisting essentially of the combination of a rocker, a tappet [98] and a lever, provides that the said rocker and tappet are coaxial, i.e., in the patent the rocker 48 is mounted on the shaft S and the shaft 49 and when the tappet 61 is brought into contact with the said rocker 48 by depressing the lever F, the pin 60 which provides the axis for the tappet 61 is coaxial with the said shafts S and 49. In order to obtain coaxiality in the tuner of the reissue patent, because such tuner is operated by a lever, it is necessary that the distance between the pin 60 and the pivot Q shall be equal to the distance between the pivot Q and the axis of the shafts 49 and S. Moreover, the tappet 61 must be so shaped that, when the lever F is pushed home, the axis of the tappet will line up in a vertical direction with the axis of the rocker 48. The plungers of the tuners Exhibits 1, 2, 3, 4 and 5 do not achieve coaxiality between rocker and tappet

in the same or in substantially the same way. Since the plungers of these tuners operate transversely with a push-rod motion, it is necessary to locate the position of the axis of the tappet in both horizontal and vertical direction so that, when the plunger is pushed home, the axis of the tappet will line up with the axis of the rocker. This is accomplished in a vertical direction by having two bearings for the push rod, one above and one below, and these bearings locate the center of the tappet so that it will lie in a vertical line that will be neither higher nor lower than the axis of the rocker. To achieve coaxiality in a horizontal direction, the tappet is so shaped that, when the plunger is pushed home, the axis of that tappet coincides with the rocker axis.

Moreover, the plungers of the tuners Exhibits 1, 2, 3, 4 and 5 achieve their results in a different way than do the levers of the patented combination in that a lever has the property of multiplying a mechanical force whereas a plunger does not. Where it is desirable to increase mechanical force, a plunger [99] cannot operate as a lever. For example, a plunger has no mechanical advantage when used to displace a large boulder whereas a crowbar used as a lever has such mechanical advantage. In the structure of the reissue patent in suit the force applied to operate its lever is multiplied through the lever action so that the force acting on the rockers is approximately doubled. Such force multiplying is not present in the transversely

operating plungers of the tuners Exhibits 1, 2, 3, 4 and 5. This increase in force shown in the patent in suit is subject to the disadvantage that the motion at the outer end of the lever must be greater than the motion applied to the rocker, which results in a tuning device characterized as the "cash register type," such as disclosed in prior art patent No. 1,906,106 to Schaefer (Pltffs. Ex. 9). Again, the frictional locking device as shown in the patented combination depends upon the aforementioned mechanical advantage of a lever and is not adopted for use in a plunger tuner.

* * *

/s/ SAMUEL S. MACKEOWN,

Subscribed and sworn to before me this 20th day of May, 1947.

[Seal] /s/ IRENE J. KNUDSEN,
Notary Public in and for the County of Los Angeles and State of California.

[Endorsed]: Filed May 23, 1947. [105]

[Title of District Court and Cause.]

DEFENDANT'S EXHIBIT YY—PLAINTIFF'S
ANSWERS TO DEFENDANT'S INTER-
ROGATORIES

Now Comes The Plaintiff, General Motors Corporation, under and in accord with the provisions of Rule 33 of the Federal Rules of Civil Procedure

and presents the following answers to such of the defendant's interrogatories as have not been objected to by the plaintiff:

Interrogatory 1: "What is the relationship of Delco Radio Division, of Kokomo, Indiana, to plaintiff, General Motors Corporation?"

Answer: The Delco Radio Division, of Kokomo, Indiana, is an unincorporated administrative unit of General Motors Corporation. [118]

Interrogatory 2: "Is Delco Radio Division, of Kokomo, Indiana, a subsidiary of plaintiff, General Motors Corporation?"

Answer: No, it is an integral part.

Interrogatory 3: "Is Delco Radio Division, of Kokomo, Indiana, wholly owned by plaintiff, General Motors Corporation?"

Answer: The physical assets of Delco Radio Division, of Kokomo, Indiana, are wholly owned by General Motors Corporation, but Delco Radio Division is an integral part of General Motors Corporation.

Interrogatory 4: "Was Bertram A. Schwarz employed by Delco Radio Division during the latter part of 1937 and the early part of 1938?"

Answer: Yes.

Interrogatory 5: "If the answer to Interrogatory 4 is in the affirmative, what was the capacity of said Schwarz with Delco Radio Division?"

Answer: Bertram A. Schwarz was employed

in the capacity of Chief Engineer with Delco Radio Division.

Interrogatory 6: "If the answer to Interrogatory 4 is in the affirmative, did the work of said Bertram A. Schwarz include any part of the design of push button tuners for radio receivers?"

Answer: Yes.

Interrogatory 7: "Was James G. Funk employed by Delco Radio Division during the latter part of 1937 and the early part of 1938?"

Answer: Yes. [119]

Interrogatory 8: "If the answer to Interrogatory 7 is in the affirmative, what was the capacity of said James G. Funk with Delco Radio Division?"

Answer: James G. Funk was employed in the capacity of Design Draftsman with Delco Radio Division.

Interrogatory 9: "If the answer to Interrogatory 7 is in the affirmative, did the work of the said James G. Funk include any part of the design of push button tuners for radio receivers?"

Answer: Yes.

Interrogatory 10: "Was Howard M. Stelzl employed by Delco Radio Division during the latter part of 1937 and the early part of 1938?"

Answer: Yes.

Interrogatory 11: "If the answer to Interrogatory 10 is in the affirmative, what was the capacity

of the said Howard M. Stelzl with Delco Radio Division?"

Answer: Howard M. Stelzl was employed in the capacity of Design Draftsman with Delco Radio Division.

Interrogatory 12: "If the answer to Interrogatory 10 is in the affirmative, did the work of the said Howard M. Stelzl include any part of the design of push button tuners for radio receivers?"

Answer: Yes.

Interrogatory 13: "Was Alfred George Rogers employed by Delco Radio Division during the early part of 1938?"

Answer: Yes. [120]

Interrogatory 14: "If the answer to Interrogatory 13 is in the affirmative, what was the capacity of the said Alfred George Rogers with Delco Radio Division?"

Answer: Alfred George Rogers was employed in the capacity of Assistant to Chief Engineer with Delco Radio Division, whose duties were mainly clerical.

Interrogatory 15: "If the answer to Interrogatory 13 is in the affirmative, did the work of the said Rogers include any part of the design of push button tuners for radio receivers?"

Answer: No.

Interrogatory 16: "Was William C. DeRoo employed by Delco Radio Division during the latter part of 1937 and the early part of 1938?"

Answer: Yes.

Interrogatory 17: "If the answer to Interrogatory 16 is in the affirmative, what was the capacity of the said DeRoo with Delco Radio Division?"

Answer: William C. DeRoo was employed in the capacity of Chief Draftsman with Delco Radio Division.

Interrogatory 18: "If the answer to Interrogatory 16 is in the affirmative, did the work of the said DeRoo include any part of the design of push button tuners for radio receivers?"

Answer: Yes.

Interrogatory 19: "Was Raymond A. Shuttleworth employed by Delco Radio Division during the latter part of 1937 and the early part of 1938?"

Answer: Yes. [121]

Interrogatory 20: "If the answer to Interrogatory 19 is in the affirmative, what was the capacity of the said Shuttleworth with Delco Radio Division?"

Answer: Raymond A. Shuttleworth was employed in the capacity of Design Draftsman with Delco Radio Division.

Interrogatory 21: "If the answer to Interrogatory 19 is in the affirmative, did the work of the said Shuttleworth include any part of the design of push button tuners for radio receivers?"

Answer: No.

Interrogatory 22: "Was Ludwig Fichter ever

employed in any engineering or drafting capacity by the Delco Radio Division?"

Answer: Yes.

Interrogatory 23: "If the answer to Interrogatory 22 is in the affirmative, when was the said Fichter first employed for such work?"

Answer: February 15, 1938.

Interrogatory 24: "If the answer to Interrogatory 22 is in the affirmative, was the said Fichter still with the Delco Radio Division in 1940?"

Answer: Yes.

Interrogatory 25: "If the answer to Interrogatory 22 is in the affirmative, did the work of the said Fichter include any part of the design of push button tuners for radio receivers?"

Answer: Yes. [122]

Interrogatory 26: "Was Andrew G. Tynan employed by Delco Radio Division in 1936, 1937, and 1938?"

Answer: Yes.

Interrogatory 27: "If the answer to Interrogatory 26 is in the affirmative, what was the capacity of the said Tynan with Delco Radio Division?"

Answer: Andrew G. Tynan was employed in the capacity of Electrical Engineer with Delco Radio Division.

Interrogatory 28: "If the answer to Interrogatory 26 is in the affirmative, did the work of said Tynan include any part of the design of push button tuners for radio receivers?"

Answer: No.

Interrogatory 29: "Were any persons other than those mentioned in the foregoing interrogatories connected in any way with the design of push button tuners for radio receivers at Delco Radio Division during any part of 1936, 1937, and 1938?"

Answer: No.

Interrogatory 30: "If the answer to Interrogatory 29 is in the affirmative, give a complete list of their names."

Answer: No answer required in view of the answer to the preceding interrogatory.

Interrogatory 31: "Is it not true that Delco Radio Division placed a push button tuner in production embodying racks and having certain features in common with the tuner shown on drawing Ax-3323, which said drawing was introduced as Exhibit 8 in behalf of Schwarz in Interference No. 78,359 in the United States Patent Office?"

Answer: No. [123]

Interrogatory 32: "If the answer to Interrogatory 31 is in the affirmative, when was such tuner placed in production?"

Answer: No answer required in view of the answer to the preceding interrogatory.

Interrogatory 33: "If the answer to Interrogatory 31 is in the affirmative, furnish the court with a copy of drawing Ax-3323."

Answer: No answer required in view of the answer to Interrogatory 31.

Interrogatory 34: "If the answer to Interrogatory 31 is in the affirmative, furnish the court with one of the said tuners."

Answer: No answer required in view of the answer to Interrogatory 31.

Interrogatory 35: "Is it not true that Delco Radio Division purchased more than 10,000 automatic tuners from Crowe Name Plate and Manufacturing Company, of Chicago, Illinois, during 1939 and 1940 which required that a screw driver be inserted through a tube attached to the shank of each plunger in order to loosen a screw before the mechanism could be adjusted so that the operation of the said plunger would tune in a predetermined station?"

Answer: Yes.

Interrogatory 36: "Was Delco Radio Division the first concern to manufacture tuners of the type exemplified by Plaintiff's Exhibit 1, in which the rotatable tappet is recessed to permit the rocker or treadle bar to become coaxial with the tappet in the tuned-in position?"

Answer: Plaintiff is not fully informed as to production by other concerns and, therefore, is unable to state whether or not they were the first concern to manufacture tuners of the type exemplified by Plaintiff's Exhibit 1. [124]

Interrogatory 37: "Is it not true that the structure of the rocker and tappet in plaintiff's Exhibit 1 was substantially copied or adapted from a Radio Condenser tuner in which the tappet was recessed

in order to permit the rocker to become coaxial with the tappet in the tuned-in position?"

Answer: The structure of the rocker and tappet in Plaintiff's Exhibit 1 was adapted by Plaintiff from a Radio Condenser tuner.

Interrogatory 38: "When did the plaintiff first place in production tuners of the type exemplified by plaintiff's Exhibit 1?"

Answer: Summer of 1940.

Interrogatory 39: "When did the plaintiff first place in production tuners of the type exemplified by plaintiff's Exhibit 2?"

Answer: April, 1947.

Interrogatories 40, 41, 42 and 43: 'Objected to.

Interrogatory 44: "What persons in the employ of plaintiff, General Motors Corporation, or Delco Radio Division, took part in the design of the tuner exemplified by plaintiff's Exhibit 1?"

Answer: None.

Interrogatory 45: "How long has each of the persons mentioned in Interrogatory 44 been in the employ of plaintiff, General Motors Corporation, or Delco Radio Division?"

Answer: No answer required in view of the answer to the preceding interrogatory. [125]

Interrogatory 46: "What persons in the employ of plaintiff, General Motors Corporation, or Delco Radio Division, took part in the design of the tuner exemplified by plaintiff's Exhibit 2?"

Answer: Bertram A. Schwarz, Manfred G. Wright, and Howard M. Stelzl took part in the design of the tuner exemplified in plaintiff's Exhibit 2.

Interrogatory 47: "How long has each of the persons mentioned in Interrogatory 46 been in the employ of plaintiff, General Motors Corporation, or Delco Radio Division?"

Answer: Mr. Bertram A. Schwarz has been in the employ of General Motors Corporation for approximately twelve years, Mr. Manfred G. Wright for approximately nine years, and Mr. Howard M. Stelzl for approximately eleven years.

Interrogatory 48: "Prior to 1941, how many applications for United States Letters Patent were filed relating to automatic radio tuning devices, and which were assigned to plaintiff, General Motors Corporation, in the names of Bertram A. Schwarz, James G. Funk, Howard M. Stelzl, William C. DeRoo, or Ludwig Fichter, either solely or jointly?"

Answer: Eleven.

Dated: Detroit, Michigan, May 12, 1948.

GENERAL MOTORS
CORPORATION,

By /s/ J. M. CRAWFORD,
Vice President.

/s/ LEONARD S. LYON,
Attorney for Plaintiff.

/s/ LEONARD S. LYON, JR.,
Attorney for Plaintiff. [126]

State of Michigan,
County of Wayne—ss.

Mr. James M. Crawford, being first duly sworn, deposes and says: I am Vice President of Plaintiff, General Motors Corporation. I have read a copy of Defendant's Interrogatories in this action and have read the foregoing Answers of the Plaintiff to the Interrogatories not objected to. According to the best of my information and belief said answers are true and correct.

/s/ J. M. CRAWFORD.

Subscribed and sworn to before me this 12th day of May, 1948.

[Seal] By /s/ FRED E. JONES,
Notary Public.

My Commission expires March 18, 1950.

Marked Defendant's Exhibit YY and admitted in evidence May 27, 1948.

Affidavit of Service by Mail attached.

[Endorsed]: Filed May 15, 1948. [127]

[Title of District Court and Cause.]

TRIAL BRIEF ON BEHALF OF
PLAINTIFF

* * *

The argument of defendant might be taken to mean, however, that Leishman conceives himself to be the man responsible for the practicable automatic

radio tuner. This again is manifestly erroneous in view of the existence of the Zenith tuner which came upon the market and was sold for two years during 1929 and 1930 (dfts. Exs. H and I, R. 313) which was patented as Schaefer patent No. 1,906,106 (ptfs. Ex. 18, R. 475), and which later reappeared in the form of a General Motors push button automatic automobile radio tuner (ptfs. Ex. 3, R. 327), of which approximately five hundred thousand were sold during the years 1939 and 1940 (R. 324). The Schaefer tuner consisted of an adjustable tappet pivoted to a lever which was brought into engagement with a rack and pinion structure rather than a rocker and which, as admitted by the defendant, solved any of the setting difficulties attributed by the defendant to Marschalk (dfts. Opening Brief, p. 18, 11. 22-25). [170]

* * *

As is admitted by all parties, the Crosley tuner and the subsequently developed push button tuners have achieved overwhelming commercial success and, finally, the Schaefer tuner, made over from lever form to plunger form into the General Motors tuner plaintiff's Exhibit 3, sold in the amount of five hundred thousand in 1939 and 1940 (R. 323).

* * *

Respectfully submitted

LYON & LYON,

/s/ LEONARD S. LYON,

/s/ LEONARD S. LYON, JR.,

Attorneys for Plaintiff.

Subscribed and sworn to before me this 5th day of November, 1948.

/s/ IRENE J. KNUDSEN,

Notary Public in and for the County and State above named.

Affidavit of Service by Mail attached.

[Endorsed]: Filed March 18, 1949.

[Title of District Court and Cause.]

CONCLUSIONS OF THE COURT AND MEMORANDUM OF DECISION

This action is for a declaratory judgment. The relief the plaintiff seeks is a judicial determination that certain radio tuning devices manufactured and sold by plaintiff do not infringe Claims 7 to 11, inclusive, of United States Reissue Letters Patent No. 20,827 applied for by defendant May 23, 1938, and granted to him August 16, 1938, and also that such patent claims are invalid. Issue was joined by defendant's answer and his counterclaim whereby he denied allegations of plaintiff's complaint and affirmatively alleged validity of the patent claims in suit and charged infringement thereof by certain radio tuning devices admittedly made and sold by the plaintiff corporation.

This cause was tried on the merits upon a transfer from another division of this court. It has been ably and [299] exhaustively briefed; the final brief

having been filed by defendant on April 16, 1949. Decision has been deferred until the Supreme Court acted upon a petition for certiorari to review a decision of the Court of Appeals of the Tenth Circuit which had invalidated the claims of the patent that are in issue before us. On April 18, 1949, the Supreme Court refused to review the Tenth Circuit decision by denying the petition for certiorari. Thus the questioned claims involved in this action have been held by a federal appellate court of superior authority to ours to involve no invention, and while the decision of the appellate court in the Tenth Circuit (*Richards and Conover Company v. Leishman*, 172 F. 2d 365), does not operate to control us in this action, our own Court of Appeals having never specifically invalidated the patent claims in issue, we think, however, that the appellate decision in the Tenth Circuit having been based upon substantially the same record as made herein, we should and do consider such decision as highly persuasive and as weakening any presumption of validity to the claims in the suit would otherwise attach to the Leishman Reissue Patent by reason of its issuance. This, we think, is manifestly the correct position for us to take in the light of the unanimous confirmatory decision of the Tenth Circuit Court of Appeals on rehearing as shown in the reported decision whereby it again rejected the contention that invention is found in the patent claims in controversy.

The purposes, specifications and questioned claims of the Reissue Patent No. 20,827 and of the earlier

Letters Patent No. 2,108,538 from which it originated, have been so adequately detailed and stated in the opinion of our Court of Appeals in *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722, that we consider repetition here [300] unnecessary.

While, as we have earlier in this memorandum observed, that our Court of Appeals has not definitely adjudicated the issue of patent validity of the claims in action before us, there are rather significant expressions in the opinion of Judge Mathews, writing for the court in *Leishman v. Associated Wholesale Electric Co.*, *supra*, that induce at least a surmise that our own Appellate Court had its misgivings as to any inventive qualities in the claims of the patent in suit that are again before this court for consideration and decision.

After quoting from the original patent, of which the one in suit is a reissue, and the several claims of the original patent (No. 2,108,538) granted February 15, 1938, the court said:

“Thus the specification of the original patent disclosed a combination comprising rockers, tappets and levers, the tappets and levers constituting what the specification calls a lever assembly; and the claims of the original patent are for combinations each of which includes a lever or levers. No leverless combination is disclosed or claimed in the original patent, nor does it appear from the face thereof that any leverless combination was intended to have been covered or secured thereby.

As stated before, the specification, the drawing

and the claims of the original patent were incorporated, without change, in the reissue patent. Claims 7-11 of the [301] reissue patent are new."

The claims here in suit are then quoted in Judge Mathews' opinion, who then for the court states:

"These claims, it will be observed, are for combinations each of which includes a rocker. Whether the combinations include tappets and levers is not clear. If they do not include levers, the claims are not for the same invention as the original patent and hence are invalid. If they do include levers, the claims are not infringed, for the accused device contains no levers."

It is not, in the light of such language, unjustifiable to infer that the court doubted the existence of invention in the provisions of the reissue patent with which we are concerned in this case.

But we are by no means left in doubt as far as decisional pronouncements of Federal courts in the Ninth Circuit are concerned as to whether the patent claims under scrutiny in light of earlier patents and the state of the applicable art should be viewed as inventive concepts.

In another division of this court and under a record not substantially unlike the one before us, Judge Harrison, in an exhaustive, analytical and reasoned written opinion, has held the same claims of the patent in suit here in controversy to be invalid. *Leishman v. Associated Wholesale Electric Company*, (36 F. Supp. 804).

If we are to accept the views of our Court of Appeals as written in the opinion on the appeal

from Judge Harrison's decision in the so-called Wholesale Electric Company appeal, *supra*, as we should and do, we find that [302] considering solely the verbiage of the patent under consideration and its precursors, it is obvious that no leverless combination is disclosed or claimed, and if we should broaden the claims as argued by the defendant upon an assumed application here of the principle of a noted decision of the Supreme Court in *Eibel Company v. Paper Company*, 261 U.S. 45, we would run counter to the rationale and controlling effect of the two decisions of our Court of Appeals in which the patent suit was involved. This we are not willing to do under the record before us. See *Leishman v. Associated Wholesale Electric Co.*, *supra*, and *Leishman v. Radio Condensor Co.*, 167 F. 2d 890, decided May 4, 1948.

We understand defendant to contend that our Court of Appeals would not have narrowed the scope of the Leishman patent in the two appeals from this court in the *Associated Wholesale Electric Co.* and *Radio Condensor Co.* cases had it known that plungers and levers had been recognized and used in radio tuners as equivalents. Such contention is groundless because there was before the court in the *Associated Wholesale Electric Co.* appeal knowledge of several combination instrumentalities such as the patents to Bast, No. 1,687,420; Faas, No. 1,928,200; and Marvin, No. 1,704,754; which were cited by the Patent Office in the Crosley patent application, the file wrapper therein having been in evidence in the

Associated Wholesale Electric Co. case before Judge Harrison. Everyone involved in the two cases was apprised that levers and plungers had been used in the prior art. What the Court of Appeals held in this connection was that the reissue claims involved in the litigation in the appeals are invalid unless they include levers as did the combination of the original patent, and that in the Leishman patented combination plungers and levers are not equivalents. It is [303] clear that to satisfy the requirements of equivalency in patent law it must be shown that the equivalent elements perform the same function and perform that function in the same or substantially the same way. *Wire Tie Machinery Co. et al., v. Pacific Box Corporation et al.*, 107 F. 2d 54 (C.C.A.).

In the Associated Wholesale Electric Co. case the Court of Appeals found neither of these requirements present. It found that the Crosley device, the accused apparatus, performed only a part of the function of the lever of the patented combination and such part was performed neither the same nor substantially the same way. That the Court of Appeals considered adequate and applicable prior art in the matter of equivalency is manifest from the record.

Moreover, we think independently that under the record before us and in the light of the teachings of the Marschalk Patent No. 2,072,897, and the Schaefer Patent No. 1,906,106, every element, feature and mode of operation of the Leishman combination in suit is anticipated. Even the heavily

relied upon characteristic of a coaxial combination in the reissue patent, if indeed such arrangement involves an inventive concept, as distinguished from a common expedient of machine design, is found in Schaefer.

It is no sufficient answer to the anticipating effect in this case of the Schaefer patent to assert that the Leishman reissue claims in suit are limited to coaxiality in connection with a rocker as distinguished from coaxiality in connection with the rack and pinion of the Schaefer or Zenith device. The function and mode of operation of the respective parts are identical and exclusively so. This Schaefer combination, according to the evidence, was incorporated in tuners made by the Zenith Radio Corporation [304] which were considered not satisfactorily marketable because of the bulkiness and unsightly appearances of the levers specified. As the tuner of the reissue patent in suit is provided with substantially the same levers, a like unsatisfactory commercial device appears to have been attained.

There was introduced at the trial of this action a model which was constructed accurately in accordance with the disclosure and claims of a patent to Cunningham, No. 1,930,192, issued October 10, 1933, which is also in evidence as Plaintiff's Exhibit 10. Dr. MacKeown, an expert witness, demonstrated that the model embodying the Cunningham apparatus exemplified coaxiality substantially identical as in the Leishman Combination and also in accordance with a written test written by de-

fendant and published and circulated to the radio industry by him as descriptive of what he claimed to be protected by his patent.

It therefore appears definitely that although it is not necessary to show complete anticipation in a single patent, this Cunningham combination, although intended for a purpose different than the Leishman patent, but in the same art of automatic shaft positioning devices, actually can and does perform and function to turn an attached condenser to bring in any radio station the same as the patent in suit and will attain the result of coaxiality in so doing in practically the same way as Leishman. Thus Cunningham clearly anticipated the Leishman claims in issue with the result of establishing lack of invention in such claims over the prior art. Cf. *General Electric Co. v. Jewel Incandescent Lamp Co., et al.*, 326 U.S. 242.

Even if we were to assume, which we cannot under the record before us, that Leishman was the first to advantageously employ the mechanical principle of coaxiality in the [305] functioning of radio tuning devices, we could not for that reason under settled standards of patent law validate the patent in suit. Such accomplishment would, we think, be nothing more than a new use, which is not per se patentable. *Cuno Corp. v. Automatic Devices Corp.*, 314 U.S. 84. See, also, *Old Town Ribbon & Carbon Co., Inc. v. Columbia Ribbon & Carbon Mfg. Co., Inc.*, 159 F.2d 379, (C.C.A.2, 1947).

Stress has been argued upon the widespread acceptance of automatic tuning devices in the radio

industry as a reason for validating the questioned claims of the patent in suit. The evidence, however, upon this phase of the case does not warrant the court in attributing such success to the disclosures of the Leishman patent. Rather are such consequences, under the record before us, probably due to independent research and experimentation in the engineering department of the Crosley Corporation. At least such was the finding of Judge Harrison in the Associated Wholesale Electric Co. case made upon the secure ground of evaluating the evidence upon this issue with the yardstick of oral testimony from the witness stand. We have not had the same opportunity in the case at bar. Under the record here, however, we can find no sufficient reason to hold differently.

Our problem in this matter, under our record, is to weigh surmise against positive evidence, and in such situation the safer guide is to reject conjecture.

There are further issues of validity urged by the plaintiff but in view of our decision that the patent claims in issue are void for the reasons stated in this memorandum, we deem it unnecessary to discuss or decide such other matters, and we likewise do not consider it [306] necessary in the light of our conclusion of patent invalidity of the claims in suit to consider or specifically decide the question of infringement by the accused devices of the plaintiff.

Summarizing our conclusions under the record before us, we find, as did Judge Harrison of this

court in *Leishman v. Associated Wholesale Electric Co.*, 36 F. Supp. 804, and as did the Court of Appeals of the Tenth Circuit in *Richards and Conover Company v. Leishman*, 172 F.2d 365, that Claims 7, 8, 9, 10 and 11 of United States Reissue Letters Patent No. 20,827 are invalid and void.

Plaintiff's attorneys will accordingly prepare, serve and file within ten days from date hereof findings of fact, conclusions of law, and declaratory judgment with costs under the pleadings and conformable to the foregoing conclusions of the court.

Dated July 29, 1949.

/s/ PAUL J. McCORMICK,
U. S. District Judge.

[Endorsed]: Filed July 29, 1949. [307]

[Title of District Court and Cause.]

FINDINGS OF FACT AND CONCLUSIONS OF LAW

This Cause having come on for trial upon the merits, and evidence having been introduced and the cause having been submitted to the Court, and the Court having rendered its decision therein,

Now, Therefore, the Court makes the following Findings of Fact and Conclusions of Law:

Findings of Fact

1.

Plaintiff, General Motors Corporation, is a Dela-

ware Corporation, having its principal place of business at Detroit, in the State of Michigan.

2.

Defendant, LeRoy J. Leishman, is a citizen of the State of California and resides in the City of Los Angeles, California, and is the owner of United States Reissue Letters Patent No. Re. 20,827. [308]

3.

Plaintiff has manufactured and sold radio tuners, exemplified by the specimen marked Exhibit 1 filed with the Complaint, and introduced in evidence as Plaintiff's Exhibit 6.

4.

Plaintiff has manufactured and sold radio tuners, exemplified by the specimen marked Exhibit 2 filed with the Complaint, and introduced in evidence as Plaintiff's Exhibit 7.

5.

Defendant, in his counterclaim filed in the instant action, has affirmatively alleged the validity of claims 7 to 11, inclusive, of said United States Reissue Letters Patent No. Re. 20,827, and has charged infringement thereof by said tuners of plaintiff, and an actual controversy exists between the parties to the instant action.

6.

United States Reissue Letters Patent No. Re. 20,827 relates to a device which operates to tune

a radio circuit upon the manual depression of a lever which causes a radio condenser shaft to assume a predetermined position. Such a tuner employs a rotatable rocker and an adjustable tappet and when these parts are in complete engagement they are substantially coaxial.

7.

The tuners of plaintiff are devices which operate to tune a radio circuit upon the translation of a push-button or plunger which causes a radio condenser shaft to assume a predetermined position. Such tuner employs a rotatable rocker and an adjustable tappet, and when these parts are in complete engagement they are substantially coaxial.

8.

Every element, feature and mode of operation of the tuner of the patent in suit is anticipated in the light of the [309] teachings of Marschalk, Patent No. 2,072,897 and Schaefer, Patent No. 1,906,106.

9.

The coaxial characteristic of the patented tuner is anticipated by said Schaefer patent, whose function and mode of operation is identical with that of the patented tuner.

10.

The tuner of the Schaefer patent No. 1,906,106, failed of commercial success because of the bulkiness and unsightly appearance of the levers speci-

fied for such tuner. The tuner of the reissue patent in suit is provided with substantially the same levers.

11.

The widespread acceptance of push-button tuners in the radio industry is not attributable to the disclosures of the patent in suit.

12.

Such widespread acceptance of push-button tuners in the radio industry is probably due to independent research and experimentation in the engineering department of The Crosley Corporation, an Ohio corporation which, prior to plaintiff, manufactured push-button tuners in the radio industry.

13.

A model constructed accurately in accordance with Cunningham, Patent No. 1,930,192, was introduced in evidence at the trial, which can and does perform and function to turn an attached condenser to bring in any radio station the same as the patent in suit and which will attain the result of coaxiality in so doing in practically the same way as the patent in suit. [310]

14.

The Cunningham patent is in the same art of automatic shaft positioning devices as is the patent in suit.

15.

The Cunningham patent clearly anticipates claims 7, 8, 9, 10 and 11 of the patent in suit, with the result of establishing lack of invention in such claims over the prior art.

16.

Were Leishman the first to advantageously employ the mechanical principle of coaxiality in the function of radio tuning devices such employment would be nothing more than a new use per se.

Conclusions of Law

1. An actual controversy exists between the parties to the instant action sufficient to bring this cause within the Declaratory Relief Act, at the time of the filing of the Complaint herein, Judicial Code 274-d, 28 U.S.C.A. §400.

2. The Court has jurisdiction of the subject matter and parties.

3. Claims 7, 8, 9, 10 and 11 of United States Reissue Letters Patent No. Re. 20,827 are invalid as anticipated by and as lacking invention over the prior art.

4. Plaintiff is entitled to a Judgment:

(a) That claims 7 to 11, inclusive, of United States Reissue Letters Patent No. Re. 20,827 are invalid;

(b) Enjoining and restraining defendant, his attorneys, agents, servants, employees, associates and confederates from asserting, contending, claim-

ing or alleging that United State Reissue Letters Patent No. Re. 20,827 has been or is being infringed by plaintiff or by the tuners manufactured, used or sold by plaintiff as exemplified by the tuners marked Exhibits 1 and 2 filed with the Complaint herein; [311]

(c) Enjoining and restraining defendant, his attorneys, agents, servants, employees, associates and confederates from asserting, contending, claiming or alleging that the use and sale of tuners manufactured by plaintiff, as exemplified by the tuners marked Exhibits 1 and 2 filed with the Complaint herein, has been or is an infringement of United States Reissue Letters Patent No. Re. 20,827, particularly claims 7, 8, 9, 10 or 11 thereof;

(d) Enjoining and restraining defendant, his attorneys, agents, servants, employees, associates or confederates from prosecuting any action in law or equity in which tuners manufactured by plaintiff, as exemplified by the tuners marked Exhibits 1 and 2 filed with the Complaint herein, are asserted to have been or are an infringement of United States Reissue Letters Patent No. Re. 20,827, particularly claims 7, 8, 9, 10 or 11 thereof;

(e) For its costs in this action.

/s/ PAUL J. McCORMICK,
Judge.

Dated: Sept. 8, 1949.

[Lodged]: Aug. 8, 1949.

[Endorsed]: Filed Sept. 8, 1949. [312]

In the United States District Court, Southern District of California, Central Division.

Civil No. 5781-M

GENERAL MOTORS CORPORATION, a corporation,

Plaintiff,

vs.

LeROY J. LEISHMAN,

Defendant.

FINAL JUDGMENT

This Cause having come on for trial upon the merits, and evidence having been introduced and the cause having been submitted to the Court, and the Court having rendered its decision herein and having made and entered its Findings of Fact and Conclusions of Law, and being fully advised in the premises, upon consideration thereof.

It Is Hereby Ordered, Adjudged and Decreed as Follows:

I.

That claims 7, 8, 9, 10 and 11 of United States Reissue Letters Patent No. Re. 20,827 in suit are invalid as anticipated by and lacking invention over the prior art.

II.

That defendant, LeRoy J. Leishman, his attor-

neys, agents, servants, employees, associates and confederates be and they are hereby enjoined and restrained from asserting, contending, claiming or alleging that said United States Reissue [313] Letters Patent No. Re. 20,827 has been or is being infringed by the plaintiff or by the tuners manufactured, used and sold by the plaintiff, as exemplified by the tuners marked Exhibits 1 and 2 filed with the Complaint here.

III.

That defendant, LeRoy J. Leishman, his attorneys, agents, servants, employees, associates and confederates be and they are hereby enjoined and restrained from asserting, contending, claiming or alleging that the use or sale of the tuners manufactured by plaintiff, as exemplified by the tuners marked Exhibits 1 and 2 filed with the Complaint herein, has been or is an infringement of United States Reissue Letters Patent No. Re. 20,827, particularly claims 7, 8, 9, 10 or 11 thereof.

IV.

That said LeRoy J. Leishman, his attorneys, agents, servants, employees, associates and confederates be and they are hereby enjoined and restrained from prosecuting any action at law or equity in which tuners manufactured by plaintiff, as exemplified by the tuners marked Exhibits 1 and 2 filed with the Complaint herein, are asserted to

have been or be an infringement of United States Reissue Letters Patent No. Re. 20,827, particularly claims 7, 8, 9, 10 or 11 thereof.

V.

That a Writ of Injunction issue for the plaintiff against the defendant, LeRoy J. Leishman, his attorneys, agents, servants, employees, associates and confederates in accordance with Paragraphs II, III and IV hereof.

VI.

That plaintiff have and recover from defendant its costs in this action in the sum of [314] \$436.70 to be taxed by the Clerk.

Dated this 8th day of Sept., 1949.

/s/ PAUL J. McCORMICK,
Judge.

[Lodged]: Aug. 8, 1949.

Judgment entered Sept. 9, 1949.

Docketed Sept. 9, 1949.

Affidavit of Service by Mail attached.

[Endorsed]: Filed Sept. 8, 1949. [315]

[Title District Court and Cause.]

MOTION UNDER RULE 52b TO AMEND THE
FINDINGS, CONCLUSIONS AND JUDG-
MENT, AND MOTION FOR A NEW TRIAL
UNDER RULE 59.

Now Comes the defendant, LeRoy J. Leishman, and moves that this Honorable Court amend its Findings, Conclusions and Judgment under Rule 52b FRCP in the manner hereinafter set forth. Defendant also moves under Rule 59 FRCP that a new trial be held to permit the defendant to introduce evidence in refutation of the new grounds which the Court of Appeals of the Tenth Circuit advanced against the patent in suit after the records were closed in the instant case and in the Tenth Circuit case of *The Richards and Conover Co. v. LeRoy J. [317] Leishman*, Appeal No. 3577, November Term 1948. Inasmuch as this Honorable Court's opinion has in effect accepted these new grounds as persuasive herein, it is important that defendant be given an opportunity to present evidence to refute them. Otherwise he loses in both courts on newly advanced grounds on which he has not been heard.

Of course, if the motion is granted to amend the Findings, Conclusion and Judgment as hereinafter set forth, there will be no occasion under Rule 59 for a new trial.

The particulars in which defendant moves this Honorable Court to amend its Findings, Conclusions and Judgment, are as follows:

In Finding of Fact 6, change line 18, page 2 to read: —the depression of a manually operable member which causes a radio condenser—.

Strike out Findings 8, 9 and 10 for the reasons discussed in the accompanying memorandum.

Strike out Finding 11 and substitute Finding 29 for the reasons set forth in the memorandum. Finding 29 appears in its proper numerical order with the other proposed new findings.

Strike out original Finding 12 and substitute new Finding 25, which appears with the other new findings in proper numerical position. The reasons for requesting this change are also set forth in the memorandum.

Strike out original Finding 20 and substitute new Finding 31, *infra*. The memorandum also sets forth why this change must be made in the interest of accuracy.

Change Finding 14 to read as Finding 32, *infra*.

Strike out Findings 15 and 16 for the reasons discussed in the memorandum.

In order that the Conclusions and Judgment may be in harmony with the correct findings, defendant moves that the new Conclusions and Judgment, submitted herewith following the new findings, be substituted [318] in lieu of the original Conclusions and Judgment.

Re: The Affidavits Filed Herewith In Support
of Defendant's Motion for a New Trial

The accompanying affidavits are filed in support

of defendant's motion for a new trial, the reasons for which are discussed in the accompanying memorandum.

Proposed New Findings

9. The device of the patent in suit belongs to a general class of apparatus in which a rotatable element is returned to a predetermined angular position by means of a positioning element, or tappet.

10. In cash registers and adding machines, fixed tappets have been used for turning rotatable elements to ten different angular positions corresponding to 0 and the digits from 1 to 9. Prior art devices of this type are exemplified in the Woodbridge patent No. 585,996, in which the tappets are formed at respectively different angles on the manual operating numbers, as shown in Figs 1 and 10.

11. For radio sets, fixed tappets as in the prior art would require a different operating member for each of the hundreds of broadcasting stations. As a consequence, it was necessary to provide means whereby the user could easily and readily adjust the tappets for the particular stations required. The difficulty encountered in providing such means is well demonstrated in the mechanism shown in Fig. 14 of the Marschalk patent No. 2,072,897, exemplified by Defendant's Exhibit E, in which the engagement of the loosened tappet with the tilted rocker causes undesired rotation, or "creeping" during the adjusting or "setting" process.

12. Before the teachings of the patent in suit became available to the radio industry, various inventors of adjustable tappet tuners [319] eliminated the creeping difficulty by the introduction of many extra parts or by the use of complicated or tedious methods of adjustment.

13. The prior art tuner disclosed in the Schaefer patent No. 1,906,106 and used in radio sets of the Zenith Corporation for about two years, circumvented the creeping difficulty by the introduction of ten moving parts between the tappet and the rotatable element. These ten intervening parts required eight guides.

14. Soffietti in Italy (U. S. patent No. 2,388,581, Fig. 6) avoided the creeping difficulty by the use of two tappets that were very tedious to adjust.

15. Lane & Mackey in the United States (application Ser. No. 117,163, Def. Exs. K and K-1) avoided creeping by the introduction of extra parts and by the use of a tedious method of adjustment.

16. The Delco Radio Division of General Motors Corporation, the plaintiff herein, began work on a mechanical push button tuner in the latter part of 1936 or the first part of 1937, with full knowledge of the Schaefer tuner. Delco engineers developed an adjustable tappet tuner which had two racks operatively interposed between each tappet and the rotatable element. A five button tuner of this type contained ten such racks. This General Motors tuner (Plaintiff's Ex. 3) was placed on the market

in 1938. Between 1936 and 1938 when the Ex. 3 tuner was introduced, design work on automatic tuners was carried on at the Delco Radio Division of General Motors by James G. Funk, Howard M. Stelzl, William C. DeRoo, Raymond A. Shuttleworth and Bertram Schwarz.

17. The Crosley Corporation began work on a push button tuning device early in '37 or the winter of '36 with full knowledge of the Zenith-Schaefer tuner. Johnston, Kellogg, Tyzzer and Kilgour were all connected with this research, but as late as October, 1937, nothing satisfactory had been developed.

18. Defendant solved the problem of creeping and made tuners easy to adjust without adding any extra parts whatever. He did this by shaping the tappet and rocker with respect to each other so that one could nest within the other, and by providing a coaxial relationship between the rotational axis of the tappet and the rotational axis of the rocker in the fully engaged position.

19. Plaintiff presented no example of a previous use of a coaxial relationship for the prevention of rotation, and Plaintiff's expert Schwarz stated on cross-examination that he knew of no instance in which a coaxial relationship had previously been used for such purpose, (R. 433-434).

20. Defendant's simple solution of the creeping problem was not apparent to any of the many engineers and skilled workers in the automatic tuning art before his teachings became available, these

engineers having resorted to more complicated solutions.

21. Knowledge of defendant's structure first became available to the public through the file wrapper of his patent No. 2,084,851, which issued from the same parent application as the patent in suit. Copies of this parent file wrapper were obtainable by the public at any time after June 22, 1937, when patent No. 2,084,851 was granted.

22. On October 25, 1937, the patent law firm of Allen and Allen wrote defendant that it had been asked by Mr. Johnston, chief engineer of the Crosley Corporation, to investigate defendant's patent No. 2,084,851, the file wrapper of which disclosed defendant's coaxial rocker and tappet construction. (Def. Ex. AA.)

23. In October, 1937, the Crosley Corporation abandoned the plunger-operated Kellog tuner which it had hoped to put in production (R. 517). This tuner did not work out properly and the Corporation switched over to a structure embodying a coaxial rocker and tappet (R. 517) as taught in the file wrapper of Leishman's patent No. 2,084,851, from which the subject matter of the patent in suit was divided. (Def. Ex. O, p. 29.)

24. In January or February, 1938, the Crosley Corporation placed radio sets upon the market containing plunger-operated tuners [321] embodying coaxial tappets and rockers (R. 92).

25. The commercial success of the Crosley plun-

ger-operated tuners using the coaxial rocker and tappet construction cannot be attributed to the plungers, because plunger-operated tuners were old and the Crosley Corporation did not achieve success with them until it added the coaxial rocker and tappet construction taught by the patent in suit.

26. Beginning in 1938, numerous other manufacturers placed sets upon the market containing coaxial rocker and tappet tuners.

27. The Zenith Corporation, which abandoned the Schaefer tuner having ten intervening parts between the tappet and rotatable element, subsequently used coaxial rocker and tappet tuners made by a licensee under the patent here in suit (Def. FF). It later experimented with tuners of other types, but in May, 1948, it announced that it was changing to another kind which it found more reliable (Def. Ex. FFF). This more reliable kind, of which a sample is in evidence as Def. Ex. GGG, is of the coaxial rocker and tappet construction.

28. The Delco Radio Division of General Motors Corporation, the plaintiff herein, manufactured tuners of its own design (P. Ex. 3) having two racks operatively interposed between each tappet and the rotatable element. It later abandoned this structure and adopted the coaxial tappet and rocker structure. Plaintiff's expert Schwarz admitted that General Motors had used approximately one million coaxial tappet and rocker tuners up to the time of the trial (R. 416).

29. In automobiles that were being manufactured at the time of the trial, the push button tuners that embodied the teachings of the patent in suit far outnumbered all others, the coaxial rocker and tappet construction being used in all factory equipped automobiles excepting Studebaker, Packard, and certain models in the Chrysler line (R. 400 et seq.).

30. Coaxial rocker and tappet tuners have been used in many [322] models of household sets (R. 679 et seq.), and at the time of the trial they were used in frequency modulation sets (R. 677 et seq.), where the accuracy required is very high (R. 323).

31. At the trial, plaintiff introduced a model purporting to show that the mechanism of the Cunningham patent No. 1,930,192 could be used to function as an automatic tuner in the same way as the patent in suit; but this model contained substantial modifications and even then could not be made to function for any of the purposes of an automatic tuner without departing from its original mode of operation.

32. The allegedly anticipating Cunningham patent pertains to a device for making a record on a chart of the quantity of gas in a container. Cunningham's device contains a rocker attached to a recording pen, and the rocker is positioned by a tappet-like member which is readjusted at regular intervals, while disengaged from the rocker, to correspond to the height of a float in the gas chamber. When in contact with the rocker, the tappet-like

member is always locked against rotation and it is never adjusted by the rocker. The "creeping" difficulty encountered in automatic tuners where the freely pivoted tappet must be adjusted by the rocker is thus never encountered in a device such as Cunningham's, and his device therefore cannot properly be urged as one that solved a problem analogous to that which was overcome by the structure of the patent in suit.

33. The specification and drawings of defendant's original patent No. 2,108,538 and of his re-issue patent in suit are identical. The purpose of the coaxial relationship between the tappet and rocker is to make the tuner easy to adjust, and this object was set forth in both the original and re-issue patents (p. 1, column 1, lines 30-31). Structural features which plaintiff's expert Mackeown admitted were necessary for the coaxial relationship, were set forth in claims of both the original and re-issue patents. The re-issue [323] patent is thus for the same invention as the original patent.

34. The disclaimers limit the respective claims to a specific class of the general class to which they apply and conform to the disclaimer formula set forth by the Supreme Court in footnote 2, page 490, of its decision in *Altoona Publix Theatres v. American Tri-Ergon Corp.* 294 U. S. 477.

35. The evidence shows that the essence of defendant's invention is in the rocker and tappet and the coaxial relationship between their axes of rotation and not in the manual operating means.

36. Evidence introduced for the first time in this circuit shows that it is immaterial to the operation of the tappet and rocker whether the tappet is moved by a lever, plunger, or some other means, and that the direction of movement of the tappet toward the rocker is likewise immaterial.

37. Plaintiff introduced no evidence or testimony to rebut defendant's evidence that plungers and levers are equivalents for the operation of his combination. On the other hand, plaintiff admitted in its briefs that it is immaterial whether the Schaefer tuner is operated by plungers or levers, and plaintiff was unable to advance any mechanical reason why the same would not be true of Leishman's combination.

38. The portion 57 on which the tappet is mounted in the device of the patent in suit is a plunger. The original patent thus disclosed the use of a plunger. No evidence that this was a plunger was introduced in the Associated case.

39. Plaintiff's Ex. 6 tuner is operated by short levers and contains a coaxial rocker and tappet. This tuner responds to the claims at issue and is an infringement thereof.

40. Plaintiff's Ex. 7 tuner responds to the claims at issue and is an infringement thereof. [324]

Re: Conclusions of Law

Original Conclusion 3 should be changed to read:

3. Claims 7, 8, 9, 10 and 11 of United States

Reissue Letters Patent No. Re. 20,827 are valid.

The balance of the conclusions should be stricken out and the following substituted:

4. The reissue patent No. 20,827 and especially claims 7, 8, 9, 10 and 11 thereof, are for the same invention as original patent No. 2,108,538,

5. The reissue patent No. 20,827 conforms in all respects with the requirements of Section 4916 of the Revised Statutes relating to re-issues.

6. The disclaims filed by plaintiff with respect to reissue patent No. 20,827 are in conformity with Section 4917 of the Revised Statutes.

7. Plaintiff has infringed claims 7, 8, 9, 10 and 11 of reissue patent No. 20,827 by the manufacture and sale of tuners exemplified by those introduced in evidence as Plaintiff's Exhibits 6 and 7.

8. Defendant is entitled to a Judgment:

(a) That claims 7 to 11, inclusive, of United States Reissue Letters Patent No. Re. 20,827 are valid;

(b) That claims 7 to 11, inclusive, of United States Letters Patent have been infringed by the plaintiff through its manufacture and sale of tuners exemplified by those introduced in evidence as Plaintiff's Exhibits 6 and 7.

(c) That a perpetual injunction issue forthwith against the plaintiff General Motors Corporation, its officers, agents, servants, and employees, restrain-

ing them from directly or indirectly making or causing to be made, selling or causing to be sold, or using or causing to be used, any tuners for radio sets made in accordance with or embodying the inventions set forth in claims 7, 8, 9, 10 and 11 of said United States reissue patent No. Re. 20,827, and as exemplified in plaintiff's exhibits introduced at the trial as Plaintiff's Exhibits 6 and 7.

(d) That defendant recover from the plaintiff, General Motors Corporation, the damages which defendant has suffered and the profits which the plaintiff has made by reason of its infringement of said Reissue Letters Patent No. 20,827 and that this cause be referred to a special master to take and report an account of such profits and damages, and that the plaintiff, its officers, agents, servants, and employees, be required to attend before said master from time to time as he shall direct, and to produce before him all such books, papers, vouchers, documents and devices as he may require, and to submit to such oral examination as he may direct.

(e) That the defendant recover from the plaintiff his costs and disbursements of this suit to be taxed by the clerk, and that defendant have execution, therefore, against the said defendant.

(f) That the judgment be amended in conformity herewith.

Respectfully submitted,

/s/ JOHN FLAM,

Attorney for Defendant. [326]

[Title of District Court and Cause.]

NOTICE OF HEARING

Please Take Notice that the undersigned will bring on for hearing before the above Court in its Courtroom in the Federal Building, Los Angeles, California, on Monday the 3rd day of October, 1949, at 10 a.m. o'clock, or as soon thereafter as counsel may be heard, the defendant's Motion under Rule 52(b) F.R.C.P. and under Rule 59, F.R.C.P.

/s/ JOHN FLAM,

Attorney for Defendant.

[Title of District Court and Cause.]

AFFIDAVIT OF ROBERT L. DAUGHERTY
ON BEHALF OF DEFENDANT

State of California,
County of Los Angeles—ss.

Robert L. Daugherty, being duly sworn, deposes and says as follows:

He resides in Pasadena, California, and is Professor of Mechanical Engineering at California Institute of Technology, which position he has held since 1919.

He graduated from Stanford University in 1909, where he was an instructor in Mechanical Engineering from 1909 until 1910. From 1910 until 1916

he was Assistant Professor of Mechanical Engineering at Cornell University, and he was Professor of Mechanical Engineering at Rensselaer Polytechnic Institute from 1916 until 1919. [328]

He is a Registered Professional Mechanical Engineer in the state of California, and from 1929 until 1930 he was Vice-President of the American Society of Mechanical Engineers. He is the author of several books on technical subjects published by McGraw-Hill Book Company.

He has examined Figs. 1 and 2 of the Opinion on Rehearing rendered on January 20, 1949, by the United States Court of Appeals for the Tenth Circuit in the case of *The Richards and Conover Company vs. LeRoy J. Leishman*, and he has carefully read the said opinion which makes reference to these figures.

The said figures are valueless as a basis for any kind of an analysis. Fig. 2 shows a rocker I and a triangle or tappet J. The triangle in Fig. 1, however, is not the same as in Fig. 2. The discrepancies are very great. The triangle in Fig. 1 is much taller than the triangle in Fig. 2. But the most serious error is in the position of the pivot A. The distance of the pivot A, taken at right angles to the base of triangle, should of course be exactly the same in both figures; but in Fig. 1 the pivot is shown approximately 85% further away from the base of the triangle than it is in Fig. 2. Figure 1 thus gives an entirely erroneous impression of the distance between pivots A and D when

the rocker I is tilted to the angular position shown in Fig. 1. Such figures would mislead anyone attempting to base calculations upon them.

Reference is now made to the following paragraph from the said opinion as applied to the aforementioned figures:

“When the rocker and the tappet are positioned as in figure 1, the distance from pin A to point B on the upper face of the rocker is greater than the distance from pin A to the point on edge C of the upper face of the rocker where the base of the tappet intersects such edge, referred to hereinafter as point O. And the distance from [329] the axis of the rocker shafts to the point on edge C of the upper face of rocker where the base of the tappet intersects such edge, referred to hereinafter as point P, is greater than the distance between such axis to point B. Hence, the lever from point P to the axis of the rocker shafts is longer than the lever from point O to pin A. As a result, when force is exerted by downward pressure of the lever H through the tappet upon the face of the rocker, the downward force at point O has the advantage of greater leverage than the downward force at point B, and the resisting force of the rocker at point B has the advantage of greater leverage than the resisting force of the rocker at point O.”

The author of the foregoing quoted paragraph had an entirely erroneous conception of levers or lever arms. The distance from point B to pin A in these figures does not represent the “lever” or

lever arm of the downward force at point B, and the distance from point O to pin A has nothing to do with the leverage of the downward force at point O. The lever, or lever arm, of any force is the perpendicular distance from the line of action of the force to the axis or fulcrum—that is, the distance at right angles to the force. The distance from the fulcrum or axis to the point where the force is applied, has nothing whatever to do with the leverage or turning effect of the force. Beginners in the study of mechanics must frequently be cautioned against this error. [330]

The theory of levers is explained on page 8 of Applied Mechanics, a text book written by Housner and Hudson of the Division of Engineering of California Institute of Technology. This is a recent text published in 1949 by D. Van Nostrand Co., Inc., of New York and London.

/s/ ROBERT L. DAUGHERTY.

Subscribed and sworn to before me this 17th day of September, 1949.

[Seal] /s/ NELLIE E. ADKINS,

Notary Public in and for the County of Los Angeles, State of California.

My Commission Expires March 9, 1952.

[Seal]: No. 514, Robert L. Daugherty, Mechanical, Registered Professional Engineer, California.

[Title of District Court and Cause.]

AFFIDAVIT OF JOHN W. HAZEN
ON BEHALF OF DEFENDANT

State of California,
County of Los Angeles—ss.

John W. Hazen, being duly sworn, deposes and says as follows:

He is a resident of Los Angeles, California, and since April, 1945, has been in charge of Engineering Research, Department of Engineering, at the University of California at Los Angeles. He received a Bachelor of Science degree in Mechanical Engineering and in Electrical Engineering at the University of California in 1923, where he had the highest honors in his class. In 1924 he received the degree of Master of Science in Mechanical Engineering from the same institution and is a member of Eta Kappa Nu and Sigma XI, and he is also a member of various [332] scientific societies, including the American Society of Mechanical Engineers.

He is also a member of the Engineers' Council for Professional Development where he is on the subcommittee for the Western Region. (This council is the National Accrediting Agency for Engineering Schools in the United States and Canada.)

From 1923 to 1924 he was employed by the Standard Oil Company of California. His duties in this capacity were to perform professional engineering work and supervise technicians.

From 1924 to 1925 he was an electrical engineer for the Pacific Gas and Electric Company of California.

From 1925 to 1927 he was again employed by the Standard Oil Company of California as a mechanical and electrical engineer, where his duties again included professional engineering work and the supervision of technicians.

From 1927 to 1928 he was District Engineer, doing professional engineering work and supervising technicians for the California Petroleum Corporation.

From 1928 to 1930 he taught engineering at San Bernardino Junior College, where he was head of the Department of Engineering and Mathematics from 1928 to 1930. From 1930 to 1935 he taught engineering at Los Angeles City College; from 1935 to 1943 he was in charge of Mechanical Engineering at the same institution.

From 1943 to 1945 he was Assistant Chief Engineer and Factory Manager at Los Angeles and Piqua, Ohio, for Lear, Inc. This company employs about five thousand (5000) people and there are from one hundred to two hundred (100 to 200) people in its research and development organization, where he did research and Development Engineering and supervision.

Since April, 1945, he has held his present position as Research Engineer in Charge of Engineering Research in the Department [333] of Engineering at the University of California at Los Angeles, where he is also a lecturer in Engineering.

He has read the Opinion on Rehearing rendered January 20, 1949, by the United States Court of Appeals for the Tenth Circuit in the case of The Richards and Conover Company vs. LeRoy J. Leishman. He has also read the patents relating to the devices discussed in the said decision.

The discussion in the decision and Figs. 1 and 2 thereof purport to show that a skilled mechanic would reason as outlined in the said discussion and thus be led to a solution of the problem of "creeping" which had made the Marschalk device difficult to adjust.

Actually the figures are incorrectly drawn, as identical parts are drawn with different dimensions in the two positions, thus tending to confuse the thinking about the actions of the mechanism. Furthermore, both the figures and the discussion disclose a confused and inaccurate understanding of the principles of the science of Mechanics. Dimensions which are of no consequence in the action of the device are alluded to as lever arms for forces that are not described and which, in the actual device pictured, would not act at the points nor in the manner ascribed in the discussion.

Many individual statements could be criticized as inaccurate and almost without meaning in the sense of an analysis of a mechanism. Nowhere in the discussion is disclosed a clear understanding of the principle and embodiment whose conception was necessary to prevent "creeping."

/s/ JOHN W. HAZEN.

Subscribed and sworn to before me this 18th day of September, 1949.

[Seal] /s/ LILLIAN B. SHAW,
Notary Public in and for the County of Los Angeles, State of California.

My Commission Expires Nov. 1, 1950. [334]

[Title of District Court and Cause.]

AFFIDAVIT OF SIDNEY F. DUNCAN
ON BEHALF OF DEFENDANT

State of California,
County of Los Angeles—ss.

Sydney F. Duncan, being duly sworn, deposes and says as follows:

I am a resident of Los Angeles and Professor of Mechanical Engineering at the University of Southern California, where I have been head of the Mechanical Engineering Department since September, 1948.

I received a Bachelor of Science degree in Mechanical Engineering from California Institute of Technology in 1924, and from the same Institute I received a Bachelor of Science degree in Electrical Engineering in 1925 and a degree of Master of Science in Mechanical Engineering in 1939. [335]

I have been at various times a consultant to Farr Company and Gilfillan Bros., Inc., both of Los Angeles. I am a member of the American Society of

Mechanical Engineers, The American Society of Metals, and am an active member of Sigma XI (honorary for research). I am also an Honorary Member of Tau Beta Pi and Pi Tau Sigma, both of which are national scholarship societies for Mechanical Engineering students.

I have had twenty years teaching experience at the University of Southern California, where I have taught various subjects including courses in Analytical Mechanics, Strength of Materials, Mechanism and Kinematics of Machinery and Machine Design.

On September 16, 1949, Mr. LeRoy J. Leishman of Los Angeles, Calif., presented me with a copy of the decision rendered by the United States Court of Appeals, Tenth Circuit, in the case of The Richards and Conover Company vs. Leishman, designated as case No. 3577, November Term, 1948. With this document he provided me with copies of patents and other pertinent papers and records bearing on the case in which the decision referred to was rendered. Mr. Leishman requested that I study the decision and other documents with a view to expressing an expert opinion on the correctness of the analysis of the action of the mechanism shown as Figs. 1 and 2 of the decision referred to. I have studied the various documents and the decision and have formed an opinion which is stated below.

Referring to Figs. 1 and 2 of the decision it is obvious to me as an engineer that an error in drawing the tappet J in its two positions, along with im-

perfect understanding of the laws of mechanics as taught in all schools and colleges of Engineering, led to a line of reasoning which contributed to the decision rendered by the Court. The error in drawing is apparent to the naked eye and is that the distance from point A to side BC of the tappet J is considerably different in Fig. 1 from what it is in [336] Fig. 2. This change in the location of point A on the tappet J would indicate a change in the physical dimensions of the corresponding part in an actual mechanism. Unless such change in dimension actually occurs, conclusions based on the two figures referred to could not be properly applied to the actual mechanism, in this case a tuner. The error in drawing the tappet in its two positions could have led to the statement in the decision that “—since, when the pin A approaches substantial coaxiality with the rocker shafts, creeping disappears, it is obvious that the problem can be solved by substantial coaxiality between pin A and the axis of the rocker shafts, when the tappet is in full engagement with the rocker.”

The Court's analysis of the lever system purported to be shown by Figs. 1 and 2 of the decision is the result of first, an imperfect understanding of the basic laws governing levers and second, the singular shapes accidentally or intentionally chosen by the draughtsman who drew the figures. It is a well known principle, as evidenced by the wide adoption of such text books as

1. Analytical Mechanics for Engineers by Seely and Ensign (John Wiley and Sons).
2. Kinematics of Machines by Guillet (John Wiley and Sons).
3. Elements of Mechanism by Schawb, Merrill & James, 6th Ed. Revised by Doughtie (John Wiley and Sons).
4. Kinematics of Machinery by Albert & Rogers (John Wiley and Sons).

that only the contour of contacting surfaces of interacting parts of a mechanism and not the shape of the rest of the contacting parts determines the transmittal of forces and any tendencies toward relative motion. Thus in Figs. 1 and 2 of the decision the tappet J was uniquely drawn as a triangle of a certain shape and size. In the decision, reliance appears to have been placed on the position of vertex G, Fig. 1, in the sentence which reads, [337] "And when the rocker and tappet are positioned as in Fig. 1, the vertex G of the tappet, instead of being approximately at the line XY, as in Fig. 2, is to the left of such line—". Since the vertex G referred to has no functional contact with the rocker, I, Figs. 1 and 2, its location in space cannot influence the relative motion of the rocker and tappet.

Referring again to the principle enunciated in the paragraph above and Figs. 1 and 2 of the decision, the reasoning applied to the supposed lever arms from points P and B to the axis of the rocker shaft

and points B and A to pin A is, though erroneous, a direct result of the accidental choice of the relative lengths of the contacting faces of the rocker and tappet. If the tappet face had been drawn longer it could have overlapped the rocker face in both positions and the limits of contact on the rocker face would have been from edge E to edge C (Figs. 1 and 2 of the decision) for all usual positions of the rocker. Such a change in the drawing would not affect the operating principle of the mechanism or its tendency to creep. By similar reasoning the rocker face, though overlapping both edges of the tappet face at all times would not affect the operation of the mechanism but would have required different statements to be made in the decision relative to the supposed lever arms referred to above.

The reference by the Court to such distances as "the lever from P to the axis of the rocker shafts" and "the lever from point B to such axis" must have been prompted by incorrect information or an imperfect knowledge and understanding of the fundamental laws of analytical mechanics.

A correct analysis of the creeping tendency of the mechanism shown in Figs. 1 and 2 of the decision will show that the face of the rocker will always tend to be perpendicular to the straight line joining the axis of the rocker shaft (point D [338] Figs. 1 and 2 of the decision) and point A. This tendency will exist for an infinite number of relative locations of points D and A referred to above. The ordinary mechanic could then conclude that a more

complicated mechanism was necessary. Inspiration would, in my opinion, be necessary to first discover that coaxiality of points A and D (referred to above) when the tappet and rocker faces were in contact would eliminate the tendency to creep.

/s/ SYDNEY F. DUNCAN.

Subscribed and sworn to before me this 18th day of September, 1949.

[Seal] /s/ LILLIAN B. SHAW,
Notary Public in and for the County of Los Angeles, State of California.

My Commission Expires Nov. 1, 1950.

[Seal]: No. 998, S. F. Duncan, mechanical Registered Professional Engineer, California. [339]

[Title of District Court and Cause.]

AFFIDAVIT OF A. PAUL SORBER
ON BEHALF OF DEFENDANT

State of California,
County of Los Angeles—ss.

A. Paul Sorber, being duly sworn, deposes and says as follows:

He is a resident of Los Angeles, California. He received his scientific training at the University of Washington, the University of California at Los Angeles, and the University of Southern California. He is now in his twentieth year of teaching scientific

subjects in the Los Angeles school system. During a leave of absence from the Los Angeles City Schools, he spent two years training Western Electric Company field engineers for radar work in connection with World War II. For another period of two years he taught an off-campus course for the California Institute of Technology. He is at present teaching mechanical drafting at the Los Angeles Polytechnic High School.

In addition to mechanical drafting he has also taught machine shop work, together with supplementary science and mathematics. In these scientific courses in the Los Angeles High School system, he has taught the principles of levers, lever arms, and moments of forces. These principles are explained in the reference and text books used for these high school courses, which include Machinery's Hand Book, published by The Industrial Press, N. Y., 1941, p. 283. (This book is often referred to as the mechanic's bible''); Elements of Mechanism by Schawb, Merrill & James, published by John Wiley and Sons, Inc., New York, published 1921, p. 20.

He has examined Figs. 1 and 2 of the Opinion on Rehearing rendered on January 20, 1949, by the United States Court of Appeals for the Tenth Circuit in the case of The Richards and Conover Company vs. LeRoy J. Leishman. Photostatic copies of these figures are attached to, and made a part of, this affidavit.

Fig. 2 represents a triangle or tappet J carried

by a lever H, the tappet being pivoted to said lever at point A. Fig. 2 shows this tappet in engagement with a horizontally positioned rocker I. In Fig. 1 the same rocker I is shown tilted to an angular position. The tappet J of Fig. 1, however, does not show how the tappet J of Fig. 2 would appear if the rocker were tilted to the position shown in Fig. 1. It is common practice in mechanical work to make mechanical drawings to ascertain how parts of a machine will appear at different times and in different positions during the operation of the machine, but such drawings are entirely valueless for this purpose unless the parts are drawn accurately. The tappet J of Fig. 1 is very much bigger, particularly in height, than the tappet J of Fig. 2. [341]

Moreover, the pivot A of the tappet in Fig. 1 is arranged in a different place on this tappet than is the pivot A on the tappet J of Fig. 2. Had the tappet been properly drawn in Fig. 1 the pivot A would be exactly the same distance from the lower edge of the tappet as in Fig. 2. The tappet, of course, cannot change its shape or physical dimensions in moving from one angular position to another. In Fig. 1 the tappet has been placed about 85% further from the base of the tappet than in Fig. 2. This is a very grave error and renders these drawing worse than useless for any analytical purpose. They are worse than useless because they give an entirely misleading impression of the relative position of the axes A and D in Fig. 1 as compared with Fig. 2.

I have redrawn the tappet J, rocker I and lever H as they would appear when the rocker is tilted to the angular position shown in Fig. 1. A reproduction of this figure is attached hereto and is designated Fig. M. Any student who is familiar with the elementary principles of mechanical drafting would draw the figure in this manner. In Fig. M the tappet, rocker and lever are made the same size and of the same dimensions as the corresponding parts in Fig. 2 so that they accurately represent how the parts of Fig. 2 would appear when the rocker I is tilted to the angular position shown in Fig. 1.

I have measured the distance between the axes A and D in Fig. 2, as well as the distance between the axes A and D in Fig. M, and I find that the separation of the axes, when properly drawn as in Fig. M, is less than 1/64 of an inch greater than in Fig. 2. The axes are thus about 5% further apart in Fig. M than they are in Fig. 2; but in Fig. 1 they have been improperly represented as being separated by a distance approximately 85% greater than in Fig. 2, which is a serious misrepresentation of the true facts.

Reference is now made to the following quotation from the aforementioned opinion of the United States Court of Appeals for [342] the Tenth Circuit:

“When the rocker and the tappet are positioned as in Figure 1, the distance from pin A to point B on the upper face of the rocker is greater than the distance from pin A to the point on edge C of

the upper face of the rocker where the base of the tappet intersects such edge, referred to hereinafter as point O. And the distance from the axis of the rocker shafts to the point on edge C of the upper face of the rocker where the base of the tappet intersects such edge, referred to hereinafter as point P, is greater than the distance from such axis to point B. Hence, the lever from point P to the axis of the rocker shafts is longer than the lever from point B to such axis, and the level from point B to pin A is longer than the lever from point O to pin A. As a result, when force is exerted by downward pressure of the lever H through the tappet upon the face of the rocker, the downward force at point O has the advantage of greater leverage than the downward force at point B, and the resisting force of the rocker at point B has the advantage of greater leverage than the resisting force of the rocker at point O."

The author of the foregoing paragraph had an entirely erroneous conception of levers and lever arms. The correct principles of lever arms are taught to science students in high schools, and these principles are contrary to the view held by the author of the above quoted paragraph. The distance from point B to pin A in Figs. 1 and 2 does not represent the "lever" or lever arms of any of the forces applied. The distance from the point B to the axis D of the rocker is likewise not a correct lever arm. The aforequoted paragraph makes reference to the distances from the axes of

the rocker and tappet to the points where these members engage on the right of these axes, but none [343] of these distances referred to in the said paragraph is a true lever arm. The lever, or lever arm, of any force is the distance from the axis or fulcrum to the line of the force, taken at right angles to the line of the force.

I have attached hereto a reproduction of page 20 from the text, *Elements of Mechanism*, mentioned on page 2 of this affidavit. The scientifically accepted and verified principles of levers, as explained on the said page 20, is illustrated thereon by Figs. 23 and 24. These figures graphically show that the distance from the pivot to the point where the force is applied, is not the thing that determines the turning effect of the force. The physical levers are shown in full lines in these figures, but the actual lever arms of the forces applied are represented by the lines from M to C and from N to C in each of the figures. These lever arms in this case are thus much shorter than the distances from the pivots to the points where the forces are applied, and are the same as they would be for the much shorter physical levers shown in dotted lines if the latter were positioned as shown.

The errors in the conception of levers and leverage in the forequoted paragraph from the opinion of the Court of Appeals for the Tenth Circuit, are common errors among students who are just beginning the study of mechanics. Sometimes the actual length of a lever arm is only a small fraction of the

distance from the axis to the point where the force is applied, and no helpful information whatever as to leverages can be gained by a mere consideration of the distance from a point where force is applied to the axis of the member against which such force is directed.

Dated September 17, 1949.

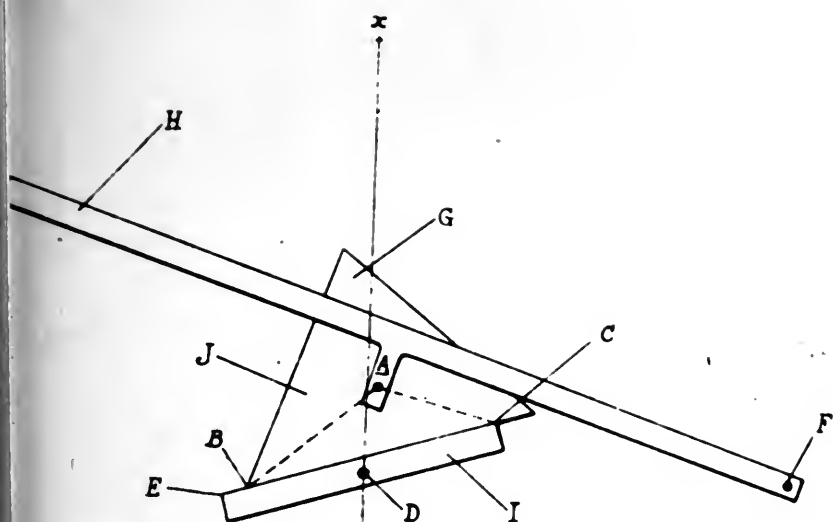
/s/ A. PAUL SORBER.

Subscribed and sworn to before me this 17th day of September, 1949.

[Seal] /s/ JESSE S. NEWTON,
Notary Public in and for the County of Los Angeles, State of California.

My Commission Expires October 22, 1951. [344]





F 19.-1

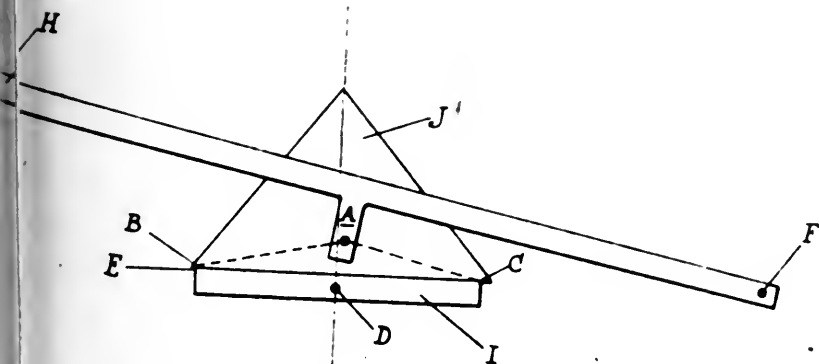
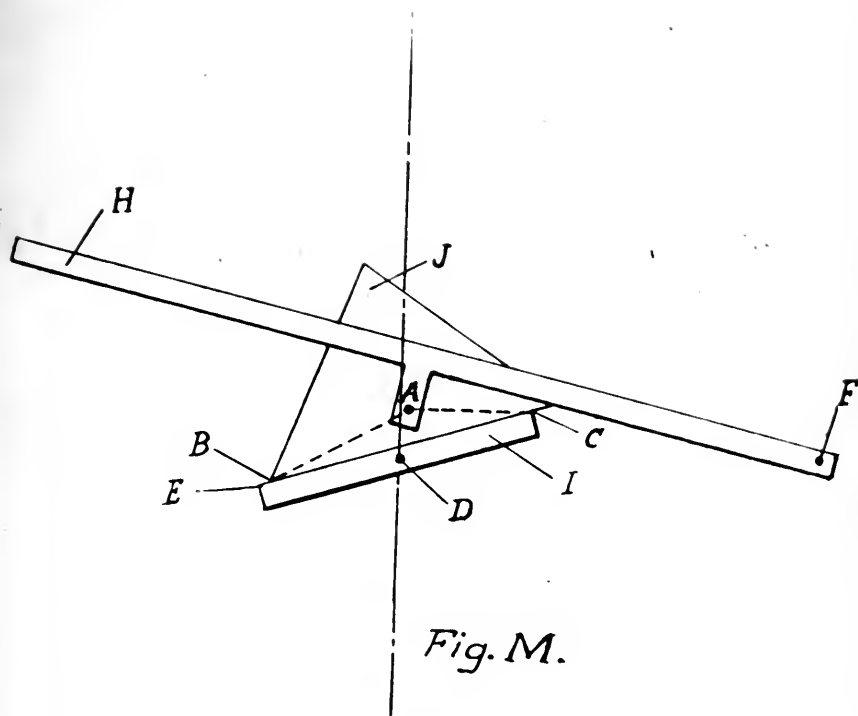


Fig.-2



BD be the line along which B is to give motion and AD the line along which A is to give motion. Let BD lie in the plane XY and AD lie in the plane VW . To find the position of the line DC' which is the trace of the plane containing the axis of the shaft, assume the plane VW to be moved to the left until it coincides with XY . Then lay out the

lever in the left elevation as described for Fig. 20. Next assume the plane VW moved back to its proper position, carrying the arm CA with it.

43. Effective Lever Arms. In the case of a lever in a position

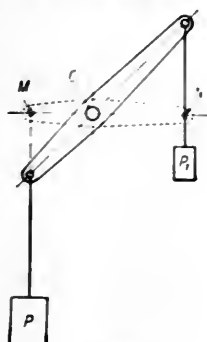


FIG. 23

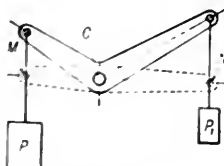


FIG. 24

such as indicated in Figs. 23 or 24, the effect is the same, for the instant, as if the weights P and P_1 were attached to the lever MCN , whose arms are found by drawing perpendiculars from the axis C to the line of action of the forces exerted by the weights P and P_1 . The perpendiculars CM and CN may be called the **effective lever arms** or **moment arms** of the weights.

[Title of District Court and Cause.]

AFFIDAVIT OF EARDLEY B. MADSEN
ON BEHALF OF DEFENDANT

State of California,
County of Los Angeles—ss.

Eardley B. Madsen, being duly sworn, deposes and says as follows:

He is a resident of Los Angeles and at present an instructor in physics and chemistry at the John H. Francis Polytechnic High School. He has a degree of Master of Science from Brigham Young University, Provo, Utah, and has taken post graduate work at the U. S. Agricultural College of Utah.

He taught physics for eleven years in the State of Utah before coming to California and since then has taught chemistry for one year in Inglewood. He has been an instructor at the [348] John H. Francis Polytechnic High School for a period of four years.

The courses that he has taught in physics have included the theory of levers, lever arms, and moments of forces. The courses in physics that he is at present teaching include instruction in these principles. The text book which his physics classes are now using is Modern Physics by Charles E. Dull. The correct principles of levers is explained in paragraph 144 on pages 124 and 125 of this text.

He has examined Figs. 1 and 2 of the Opinion on Rehearing rendered on January 20, 1949, by the United States Court of Appeals for the Tenth Cir-

cuit in the case of The Richards and Conover Company vs. LeRoy J. Leishman. Photostatic copies of these figures are attached to, and made a part of, this affidavit.

Fig. 2 represents a triangle or tappet J carried by a lever H, the tappet being pivoted to said lever at point A. Fig. 2 shows this tappet in engagement with a horizontally positioned rocker I. In Fig. 1 the same rocker is shown tilted to an angular position. The tappet J of Fig. 1, however, does not show how the tappet J of Fig. 2 would appear if the rocker were tilted to the position shown in Fig. 1. It is common practice in mechanical work to make mechanical drawings to ascertain how parts of a machine will appear at different times and in different positions during the operation of the machine, but such drawings are entirely valueless for this purpose unless the parts are drawn accurately. The tappet J of Fig. 1 is very much bigger, particularly in height, than the tappet J of Fig. 2. Moreover, the pivot A of the tappet in Fig. 1 is arranged in a different place on this tappet than is the pivot A on the tappet J of Fig. 2. Had the tappet been properly drawn in Fig. 1 the pivot A would be exactly the same distance from the lower edge of the tappet as in Fig. 2. The tappet, of course, cannot [349] change its shape or physical dimensions in moving from one angular position to another. In Fig. 1 the tappet has been placed about 85% further from the base of the tappet than in Fig. 2. This is a very grave error and renders these

drawings worse than useless for any analytical purpose. They are worse than useless because they give an entirely misleading impression of the relative position of the axes A and D in Fig. 1 as compared with Fig. 2.

Reference is now made to the following paragraph as applied to the aforementioned figures:

“When the rocker and the tappet are positioned as in figure 1, the distance from pin A to point B on the upper face of the rocker is greater than the distance from pin A to the point on edge C of the upper face of the rocker where the base of the tappet intersects such edge, referred to hereinafter as point O. And the distance from the axis of the rocker shafts to the point on edge C of the upper face of rocker where the base of the tappet intersects such edge, referred to hereinafter as point P, is greater than the distance between such axis to point B. Hence, the lever from point P to the axis of the rocker shafts is longer than the lever from point O to pin A. As a result, when force is exerted by downward pressure of the lever H through the tappet upon the face of the rocker, the downward force at point O has the advantage of greater leverage than the downward force at point B, and the resisting force of the rocker at point B has the advantage of greater leverage than the resisting force of the rocker at point O.”

The foregoing quoted paragraph is a ridiculous analysis of levers and is obviously incorrect. The distance from point B to pin A in Figs. 1 and 2 does

not represent the "lever" or lever arms of any of the forces applied. The distance from the point B to the axis D of the rocker is likewise not a correct lever arm. [350] The aforequoted paragraph makes reference to the distances from the axes of the rocker and tappet to the points where these members engage on the right of these axes, but none of these distances referred to in the said paragraph is a true lever arm. The lever, or lever arm, of any force is the distance from the axis or fulcrum to the line of the force, taken at right angles to the line of the force.

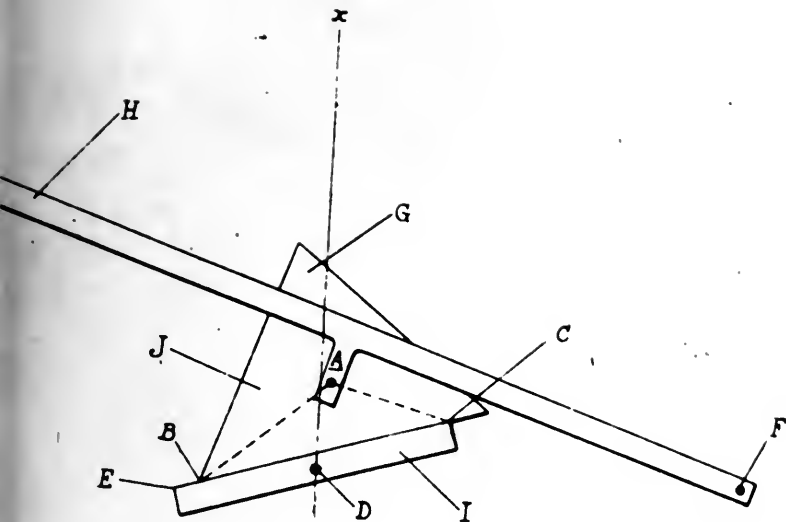
The errors in the conception of levers and leverage in the aforequoted paragraph are common errors among students who are just beginning the study of mechanics. Sometimes the actual length of a lever arm is only a small fraction of the distance from the axis to the point where the force is applied, and no helpful information whatever as to leverages can be gained by a mere consideration of the distance from a point where force is applied to the axis of the member against which such force is directed.

/s/ EARDLEY B. MADSEN.

Subscribed and sworn to before me this 16th day of September, 1949.

[Seal] /s/ ALBERTA TRAVERS,
Notary Public in and for the County of Los Angeles, State of California.

My Commission Expires August 14, 1953. [351]



F 19.-1

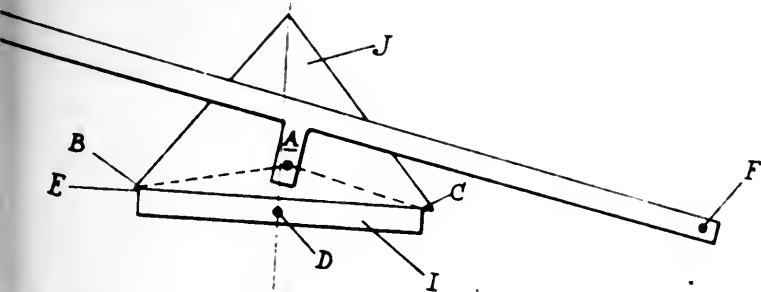


Fig.-2

[Endorsed]: Filed Sept. 19, 1949

[Title of District Court and Cause.]

ORDER DENYING MOTIONS
FILED SEPTEMBER 19, 1949

Upon review of the entire record in this action and upon consideration of all memoranda, including memorandum filed by defendant October 21, 1949, the motion of defendant under Rule 52-b to amend the findings, conclusions and judgment, and the motion for a new trial under Rule 59, all filed herein September 19, 1949, are and each of said motions is denied in toto.

Dated November 2, 1949.

/s/ PAUL J. McCORMICK,
U. S. District Judge.

[Endorsed]: Filed Nov. 2, 1949. [379]

[Title of District Court and Cause.]

NOTICE OF APPEAL

Notice is hereby given that LeRoy J. Leishman, defendant above named, hereby appeals to the United States Court of Appeals for the Ninth Circuit from the judgment entered in this action on November 2, 1949.

/s/ JOHN FLAM,
Attorney for Defendant.

[Endorsed]: Filed Dec. 1, 1949. [380]

[Title of District Court and Cause.]

TENDER OF CASH DEPOSIT IN LIEU
OF BOND ON APPEAL

The defendant, LeRoy J. Leishman, having appealed from the final judgment of this court entered on November 2, 1949, to the United States Circuit Court of Appeals for the Ninth Circuit, now tenders to the court the sum of Two Hundred Fifty (\$250.00), to be deposited on his behalf with the Clerk of said District Court, subject to the orders of this Court as security that the said appellant shall prosecute his appeal to effect; and that said appellant shall pay all costs if the appeal is dismissed or the judgment affirmed, or of such costs as the Appellate Court may award if the judgment is modified.

/s/ LeROY J. LEISHMAN,
Defendant.

Dated at Los Angeles, California, this 1st day of December, 1949. [381]

[Title of District Court and Cause.]

ORDER UNDER RULE 73 (g) F. R. C. P.

For good cause shown, it is hereby ordered that the defendant-appellant in this case shall have to and including February 28, 1950, in which to docket the record on appeal in the Court of Appeals For The Ninth Circuit.

Dated: January 9th, 1950.

/s/ PAUL J. McCORMICK,
Chief Judge.

[Endorsed]: Filed Jan. 9, 1950. [382]

[Title of District Court and Cause.]

DESIGNATION OF CONTENTS OF RECORD
ON APPEAL UNDER RULE 75(a) F.R.C.P.

The defendant-appellant hereby designates the Contents of the Record of Appeal as follows:

1. Bill of Complaint with plaintiff's exhibits 3, 4, and 5 filed therewith.
2. Defendant's Answer and Counter-claim.
3. Plaintiff's Answer to Defendant's Counter-claim.
4. Defendant's Exhibit YY—Plaintiff's Answer to Defendant's Interrogatories, including said interrogatories.
5. Opinion of District Court herein.
6. Findings of Fact and Conclusions of Law herein. [383]
7. Final Judgment herein.

8. Defendant's Motion Under Rule 52b to Amend the Findings, Conclusions and Judgment, and Motion for a New Trial under Rule 59, pp. 1 to 11, inclusive.

9. Affidavit of Robert L. Daugherty on Behalf of Defendant.

10. Affidavit of John W. Hazen on Behalf of Defendant.

11. Affidavit of Sydney F. Duncan on Behalf of Defendant.

12. Affidavit of A. Paul Sorber on Behalf of Defendant.

13. Three charts filed with Sorber Affidavit.

14. Affidavit of Eardley B. Madsen on Behalf of Defendant, including chart filed therewith.

15. Minute Order Denying Motion Under Rule 52b, and Motion Under Rule 59.

16. Defendant's Notice on Appeal.

17. Tender of Cash in Lieu of Bond on Appeal.

18. Stipulation and Order Designating Certain Documentary Exhibits to Be Physical Exhibits for the Record on Appeal.

19. Stipulation and Order for Preparing sixteen copies of a Book of Exhibits.

20. This Designation of Contents of Record on Appeal.

21. Plaintiff's Concise Statement Under Rule 19(6) of This Court and Rule 75(d) F.R.C.P.

22. Defendant's Exhibit G—Findings of the U. S. District Court of the Western District of Oklahoma in the Case of LeRoy J. Leishman vs.

The Richards and Conover Company, Civil Action No. 2155.

23. The following designated portion of the Affidavit of Samuel S. Mackeown on Behalf of Plaintiff (filed with Memorandum Opposing Defendant's Motion for Summary Judgment: Page 3, line 32, to page 5, line 16.

24. The following designated portion of Memorandum Opposing [384] Defendant's Motion for Summary Judgment:

Page 12, line 26, to page 14, line 15, inclusive.

25. The following designated portion from Trial Brief on Behalf of Plaintiff:

Page 33, lines 3 to 20, inclusive;

Page 111, lines 11 to 17, inclusive.

26. The following designated portions of Reporter's Transcript:

Page 2, line 1, to page 4, line 25, inclusive;

Page 5, line 21, to page 9, line 11, inclusive;

Page 10, lines 1 to 16, inclusive;

Page 11, lines 3 to 13, inclusive;

Page 12, lines 1 and 2;

Page 12, line 6;

Page 12, line 10, to page 14, line 16, inclusive;

Page 16, line 6, to page 22, line 12, inclusive;

Page 23, line 5, to page 30, line 21, inclusive;

Page 31, line 6, to page 34, line 2, inclusive;

Page 35, line 13, to line 22, inclusive;

Page 36, line 8, to page 40, line 9, inclusive;

Page 40, line 15, to page 49, line 10, inclusive;

Page 53, line 1, to page 55, line 3, inclusive;

- Page 60, line 5, to page 62, line 17, inclusive;
- Page 63, line 2, to page 64, line 12, inclusive;
- Page 64, line 17, to page 78, line 21, inclusive;
- Page 79, lines 5 to 10, inclusive;
- Page 81, lines 16 to 18, inclusive;
- Page 82, lines 13 to 22, inclusive;
- Page 83, lines 5 to 12, inclusive;
- Page 86, line 11, to page 91, line 11, inclusive;
- Page 92, line 5, to page 101, line 23, inclusive;
- Page 103, line 8, to page 107, line 13, inclusive;
- Page 110, line 13, to page 111, line 1, inclusive;
- Page 111, line 13, to page 120, line 2, inclusive;
- Page 123, line 23, to page 124, line 19, inclusive;
- Page 125, line 24, to page 127, line 9, inclusive;
- Page 128, lines 3 to 24, inclusive;
- Page 129, lines 19 to 21, inclusive;
- Page 130, line 11, to page 133, to end of the sentence on line 14;
- Page 134, line 23, to page 135, line 5, inclusive;
- Page 135, line 14, to 143, line 25, inclusive;
- Page 146, line 14, to page 148, line 4, inclusive;
- Page 153, lines 10 to 21, inclusive;
- Page 154, line 25, to page 157, line 9, inclusive;
- Page 157, lines 15 to 18, inclusive;
- Page 158, lines 12 to 21, inclusive;
- Page 161, lines 13 to 16, inclusive;
- Page 166, lines 3 to 12, inclusive;
- Page 166, line 19, to page 167, line 11, inclusive;
- Page 167, lines 23 to 25, inclusive;
- Page 170, line 24, to page 180, line 25, inclusive;
- Page 181, line 20, to page 183, line 6, inclusive;

Page 184, line 3, to page 195, line 7, inclusive;
Page 196, line 1, to page 197, line 11, inclusive;
Page 198, line 13, to page 204, line 16, inclusive;
Page 206, line 18, to page 215, line 4, inclusive;
Page 217, line 17, to page 221, line 9, inclusive;
Page 223, line 18, to page 225, line 7, inclusive;
Page 226, line 15, to page 227, line 11, inclusive;
Page 229, lines 16 to 19, inclusive;
Page 236, line 19, to page 248, line 15, inclusive;
Page 250, line 23, to page 307, line 25, inclusive;
Page 309, line 19, to page 364, line 9, inclusive;
Page 371, line 1, to page 488, line 23, inclusive;
Page 491, line 1, to page 713, bottom of page.

27. The following designated Defendant's and Plaintiff's Exhibits to be contained in a Book of Exhibits:

Defendant's Exhibit A: U. S. Patent No. Re. 20,827;

Defendant's Exhibit Q: U. S. Patent No. 2,108,-538, which was reissued as the patent herein suit;

Defendant's Exhibit B: Heath Patent No. Re. 17,531;

Defendant's Exhibit C. Jacke Patent No. 2,297,-152;

Defendant's Exhibit D: Kettle Patent No. 290,-894;

Defendant's Original Exhibit F, filed with Motion for Summary Judgment: Certified Translation of Philips Danish Patent No. 52,047;

Defendant's Original Exhibit Fa, filed with Motion for Summary Judgment: Photostatic copy of Philips Danish Patent No. 52,047;

Defendant's Exhibit E-1: Marschalk Patent No. 2,072,897;

Defendant's Exhibit J: Soffietti Patent No. 2,388,581;

Marvin Patent No. 1,704,754, from Book of Patents, Defendant's Original Exhibit A, filed with Motion for Summary Judgment;

Defendant's Exhibit S: Fitz Gerald Pat. No. Re. 20,357;

Defendant's Exhibit T: Enderwood Patent No. 1,834,272;

Defendant's Exhibit V: Page 21 of Radio Retail Magazine;

Defendant's Exhibit Y: Leishman Patent No. 2,163,343;

Defendant's Exhibit Z: Crowe 1937 License Agreement;

Defendant's Exhibit AA: Allen and Allen Letter;

Defendant's Exhibit GG: Crowe 1938 License Agreement;

Defendant's Exhibit PP: Page 41 of Elements of Alternating Currents;

Defendant's Exhibit QQ: The designated pages from Dictionary of Applied Physics;

Defendant's Exhibit RR: Page 30 of Electrical Measurements; [387]

Defendant's Exhibit VV: Certified copy of pages from Jacke file wrapper;

Defendant's Exhibit WW: Leishman Letter to James and Franklin;

Defendant's Exhibit XX: Patent Office Action Citing Marschalk Patent;

Defendant's Exhibit FFF: Bulletin of Zenith Corporation;

Defendant's Exhibit HHH: Bast Pat. No. 1,687,-420;

Defendant's Exhibit III: Faas Pat. No. 1,928,-200;

Defendant's Exhibit JJJ: Peck Patent No. 1,865.704;

Defendant's Exhibit KKK: Vasselli Pat. No. 1,846.289;

Defendant's Exhibit LLL: Bird Pat. No. 1,925,-651;

Defendant's Exhibit MMM: Morin Pat. No. 1,828,197;

Defendant's Exhibit K-1: Drawing from Lane and Mackey File Wrapper;

Plaintiff's Exhibit 1: James and Franklin Letter to Leishman;

Plaintiff's Exhibit 2: Leishman Letter to Radio Industry;

Plaintiff's Exhibit 8: Woodbridge Pat. No. 585,-996;

Plaintiff's Exhibit 9: Miller Pat. No. 2,014,358;

Plaintiff's Exhibit 10: Cunningham Pat. No. 1,930,192;

Plaintiff's Exhibit 18: Schaefer Pat. No. 1,906,-106;

The following designated portion of plaintiff's Supplemental Reply Brief: Page 10 of the Appendix, line 5, to page 11, line 7. The drawing occupying page 12 of the Appendix. [388]

28. The following designated physical exhibits:

Defendant's Exhibit A: Book of Patents originally filed with defendant's Motion for Summary Judgment;

Defendant's Exhibits E, L2, X, JJ, NN, F, H, L3, BB, JJ-1, SS, I, L4, EE, KK, VV, ZZ, II, L, M, FF, LL, AAA, L1, N, W, HH, MM, GGG;

Plaintiff's Exhibit 3;

Plaintiff's Exhibit 11.

29. Order of the District Court Extending Time for Filing of Record on Appeal.

30. Order of Court of Appeals Extending the Time for Filing of Record on Appeal.

Dated this seventh day of February, 1950.

/s/ JOHN FLAM,

Attorney for Defendant-
Appellant.

Affidavit of Service by Mail attached.

[Endorsed]: Filed Feb. 7, 1950. [389]

[Title of District Court and Cause.]

DEFENDANT'S SUPPLEMENTAL DESIGNA-
TION OF CONTENTS OF RECORD ON
APPEAL UNDER RULE 75(a) F.R.C.P.

The defendant-appellant hereby designates the following additional physical exhibits as part of the Record on Appeal:

Plaintiff's Exhibit 6.

Plaintiff's Exhibit 7.

Dated this tenth day of February, 1950.

/s/ JOHN FLAM,

Attorney for Defendant-
Appellant.

Affidavit of service by mail attached.

[Endorsed]: Filed Feb. 10, 1950.

[Title of District Court and Cause.]

COUNTER-DESIGNATION OF CONTENTS
OF RECORD ON APPEAL

Plaintiff-appellee hereby designates contents of the record on appeal additional to the designation of defendant-appellant as follows:

1. Plaintiff's Exhibits 1 and 2 to the bill of complaint (these to be added to defendant-appellant's designation of Exhibits 3, 4 and 5 to said complaint).

2. This counter-designation.

3. The portion of the reporter's transcript Page 153, line 22, to Page 154, line 6. [393]

4. The following Exhibits to be contained in the book of exhibits:

Plaintiff's Exhibits 4, 17, 18;

Defendant's Exhibits O, P, Q.

5. The following physical Exhibits:

Plaintiff's Exhibits 5 and 5-A;

Defendant's Exhibit LL1.

/s/ LEONARD S. LYON, JR.,
Attorney for Plaintiff-
Appellee.

Affidavit of service by mail attached.

[Endorsed]: Filed Feb. 18, 1950. [394]

[Title of District Court and Cause.]

DEFENDANT-APPELLANT'S SECOND SUPPLEMENTAL DESIGNATION OF CONTENTS OF RECORD ON APPEAL

Defendant-Appellant hereby designates the following as additional contents of the record on appeal:

Defendant's documentary exhibits K, R, U, W-1, OO, TT, UU, BBB, CCC, DDD, EEE, NNN, OOO, PPP, and QQQ;

Volumes 1 and 2 of the Transcript of Record on Appeal in *The Richards and Conover Company v. LeRoy J. Leishman*, in the United States Court of Appeals for the Tenth Circuit, [396] filed with plaintiff's supplemental brief.

This supplemental designation.

Stipulation Designating Certain Documentary Exhibits to be Physical Exhibits for the Record on Appeal.

/s/ JOHN FLAM,

Attorney for Defendant.

[Endorsed]: Filed Feb. 23, 1950.

In the District Court of the United States for the
Southern District of California, Central Division

No. 5781-M-Civil

GENERAL MOTORS CORPORATION,

Plaintiff,

vs.

LeROY J. LEISHMAN,

Defendant.

Honorable Paul J. McCormick, Judge, Presiding.

Reporter's Transcript of Proceedings

Tuesday, May 25, 1948

Appearances:

For the Plaintiff:

LYON and LYON, By

LEONARD S. LYON, SR., ESQ.

For the Defendant:

JOHN FLAM, ESQ.

Mr. Flam: I will call Mr. Leishman.

LeROY J. LEISHMAN

called as a witness on behalf of the defendant, being
first sworn, was examined and testified as follows:

The Clerk: State your full name.

The Witness: LeRoy J. Leishman.

(Testimony of LeRoy J. Leishman.)

Direct Examination

By Mr. Flam:

Q. What is your age, Mr. Leishman?

A. 52.

Q. And your occupation?

A. I am an engineer.

Q. What kind of engineer?

A. Well, I have done work as an electrical engineer and radio engineer and mechanical engineer.

Q. When did you first become interested in the subject of radio?

A. I first became interested in the subject of radio about 1917.

Q. Under what circumstances?

A. At that time I had developed some systems for transmitting pictures by wire—systems similar to what are now called facsimile transmissions or wire photos and I was [2*] interested in radio as an additional medium for transmitting pictures.

Q. Did you devise more than one of those transmitting systems for pictures?

A. Yes. I had three different systems for transmitting pictures.

Q. Any of them commercialized?

A. Yes. From 1919 until 1925 my systems for transmitting pictures were the only ones in commercial use in the United States—I think in the world.

* Page numbering appearing at bottom of page of original Reporter's Transcript.

(Testimony of LeRoy J. Leishman.)

Q. Can you give us an idea of about how many newspapers had contracts under this service?

Mr. Lyon: I object to that as immaterial and having no bearing on this case.

The Court: It may go as to the commercial success of the transmission of matters that are utilized in television and also motion pictures. I think that, however, is something that we will reach later on. Let us get down to the bases of the patent first and let us have a narrative of a commercial success later.

Mr. Flam: If your Honor please, these are questions directed to qualifying the witness as an expert.

The Court: All right.

Mr. Flam: The amount of work that he did in these fields. The commercial success of these pictures has nothing [3] to do with the commercial success of the device under patent.

The Court: We have access, of course, to the litigation and the recorded opinions of the court.

I think we can assume that Mr. Leishman has been very active in this field of activity.

Mr. Flam: Yes. But I should like to show here as a matter of record that he is also a competent engineer and an expert.

Q. (By Mr. Flam): Have you done any work in connection with television?

A. Yes; mostly in connection with means for transmitting television in color.

(Testimony of LeRoy J. Leishman.)

Q. Have you patented any inventions in the field of radio?

A. Yes. Of course the automatic tuners here involved have to do with radio and then I have some patents on what are called electric pickups which have to do really with the field of electronics, of which radio is a part. And the purpose of them was to play phonograph records electrically through the amplifiers in radio sets so in that way it had to do with the field of radio.

Q. Did any of your ideas in connection with phonograph pickups—were any of them commercialized?

A. Oh, yes. I had three different licenses under those patents. [4]

* * *

Q. (By Mr. Flam): Mr. Leishman, what takes place in a radio receiver when a station is tuned in?

A. Radio receivers of the type that are generally used are capable of being tuned to more than one station. That being true something has to be varied in order to tune [5] the set and the average set—in the average set a variable condenser is used which contains in general, two parts—a stator consisting of a group of leaves, metal leaves and then there is a rotor which also consists of a group of leaves and when the control shaft is turned the amount of angular rotation determines to what extent the stator leaves and the rotory leaves overlap.

Now, that controls capacity or—it controls the capacity of the radio set and for electrical reasons

(Testimony of LeRoy J. Leishman.)

that I don't think we need to go into—it is what takes care of the tuning so when you tune a radio set what you actually do is to rotate the control shaft of a device of this nature—a variable condenser. And then there are other ways of tuning a radio set which require that a core or plunger of finely powdered iron in a suitable binder is moved in and out of an electrical coil and the amount or the distance that the plunger is inserted within the coil determines the tuning of the set and what station is tuned in.

So, in either case when you tune a radio set you are varying something mechanically that causes the receiver to respond to a different broadcasting station.

The Court: Let me interrupt. I have tried one or two of these cases. That was sometime ago, however. Is there any difference in the nomenclature of tuning and selectivity?

The Witness: Yes, sir. [6]

The Court: What is the difference?

The Witness: In tuning you go through the process that I mentioned but selectivity has to do with the degree of accuracy of tuning.

Now, a set could be made so that it would tune very broadly and you could say you tuned it but it would be tuned broadly. Some sets have much greater selectivity than others. When we first started with radio broadcasting in Los Angeles there were only two stations, KHJ and KFI, and the sets only needed to be sufficiently selective or to have

(Testimony of LeRoy J. Leishman.)

enough selectivity to tune one out and make it so you heard the other. They were very widely spaced on the dial. They had frequencies of transmission that were widely varied so the set didn't have to have much selectivity. But as we had more and more broadcasting stations in Los Angeles, in order to make it sufficiently selective to tune out all the stations that you wanted but the particular one you were listening to it was necessary to have greater selectivity.

Q. (By Mr. Flam): What is meant by "automatic tuning" of a radio set?

A. In automatic tuning a series of manually operable selectors are provided so that the set user, by pressing a given button, can automatically tune in a desired station. When he presses the button automatically the motion is that which we have discussed and the condensers turn or the core [7] that I mentioned in the other type of tuning that is referred to as permeability tuning, the core moves into the coil just the right amount to tune in the station that is required.

Q. Now, when to your knowledge were the first mechanisms suggested that were intended to make it possible to tune radio broadcasting stations automatically?

A. Well, to my own knowledge the first ones were suggested in 1924 but I have read decisions referring to tuners that were invented in 1922.

Mr. Lyon: I object to the witness testifying as to what he has read in decisions.

(Testimony of LeRoy J. Leishman.)

The Court: Yes. I presume we can read those decisions later on if you want to cite them, Mr. Flam.

What was the date of your first acquaintance with them, Mr. Leishman?

The Witness: My first acquaintance with them personally was along about 1927 or 1928, but I have in my possession many patents that were filed as early as 1924.

Q. (By Mr. Flam): When were you granted your first patent on automatic tuning?

A. I was granted my first patent on automatic tuning in June of 1937.

Q. Was that upon your re-issue patent, Exhibit A?

A. No; but it was granted upon the same application in [8] which the tuning mechanism described in the re-issue patent was originally set forth.

Q. What was the patent of the—what was the number of the patent, do you know, on which this re-issue was based?

A. Well, the first patent that issued on that application, on which the re-issue was based, was patent No. 2,084,851. That is the one issued in June, 1937. The application on which that patent issued, though, was the application which contained the original description of the tuner as set forth in the patent before the court. [9]

(Testimony of LeRoy J. Leishman.)

Q. (By Mr. Flam): Have you made a search and found out how many automatic tuner patents were granted before patent No. 2,108,538 was issued to you in February of 1938?

A. No, I never made any search excepting through my own files.

Q. How many of them do you know of?

A. I know of 35 patents that were issued—that were filed in the United States before the original of my re-issue patent was granted. And I know of some in foreign countries as well. I think that I filed with my motion for summary judgment four foreign patents that were filed before the original of my re-issue patent was granted.

Mr. Flam: If your Honor please, the collection of patents to which this witness will refer is found in this bound volume. They are quite well indexed. One is for the use of the court and one is for the witness on the stand. [10]

* * *

The Court: This is for the purpose of showing the state of the art.

Mr. Flam: Yes, and your Honor, to show what Mr. Leishman did in connection with this industry, explaining what had happened before he came into the field and what happened afterwards.

Q. (By Mr. Flam): Now, Mr. Leishman, can you explain what some of the earlier automatic tuning devices were with the aid of this collection of patents?

(Testimony of LeRoy J. Leishman.)

A. As far as I know personally the first patent to be filed in this industry—— [11]

* * *

Mr. Flam: We will wait until you find the proper page.

* * *

The Witness: It is the tenth patent in the book.

* * *

The Witness: No. 10 was issued to W. P. Heath and states on the first page of the drawing that this one was applied for in 1924.

At that time the radio sets that were in common use generally had two or three dials and the set illustrated in Figure 1 is of the three-dial type. And since the arrangement is substantially the same for all three dials I think we can facilitate the explanation of this by referring to Figure 2 which shows one of the dials.

It may be remembered that when these sets were common that it was necessary to tune—to turn I should say, all three dials to substantially the same number. Sometimes there was a little variation.

In this Heath device an extra dial is attached to the regular dial of the set and around the periphery of this outer dial there is a series of holes and it will be noted [12] in Figure 2, that one of the strings or cords shown in the figure passes through an aperture (22) of the baseboard of the set and that it is attached to the dial directly above that aperture.

Now, the dial has been turned to that position—in the position shown in the figure, by pulling the

(Testimony of LeRoy J. Leishman.)

particular cord that is there shown in the vertical position. And I think it will readily be understood that if cord No. 18 on the right were pulled through the aperture (22) that it would rotate the dial until the position of attachment of that cord had turned approximately above the hole 22.

Now, in the Figure 1 showing again, it will be observed that three cords are attached to each one of the index tabs. The index tabs are indicated A, B, C, D, E, and all the cords attached to B, for example, have their opposite ends, after passing through the apertures 22, attached to the periphery of the periphery of the respective dials, so that by pulling cord "B," for example, of the dials they are rotated to a position which roughly corresponds to the position in which the point of attachment of the cord is above the aperture.

Now, if the cord "A" is pulled the three different wheels will be rotated to a different position in this device. I might say this device is not a very accurate one because I think it will readily be understood that when you pull on one of these cords the dial wouldn't be turned to any very [13] precise position. It would vary quite widely in the position at which it might stop above the aperture (22).

I think that is a sufficient explanation of the Heath patent. This patent, incidentally, was owned by the Zenith Radio Corporation.

Mr. Lyon: Does that appear as a matter of record?

Mr. Flam: It is on the face of the patent itself.

(Testimony of LeRoy J. Leishman.)

(Handing document to Mr. Lyon.)

Mr. Flam: I offer the Heath patent, re-issue No. 17531 in evidence.

Mr. Lyon: I object, your Honor, on the ground it is immaterial and irrelevant. I make the objection because I expect to object to this whole volume of patents as requiring your Honor to consider and construe and understand a whole lot of papers for what would at best be a very minor point in the case. [14]

* * *

The Court: Can't we pick out some patents that you think more nearly approach the feature that you claim to be invention in the patent in suit?

Mr. Flam: Well, I think, your Honor, it is very important to show this court what crude and inefficient attempts have been made to solve the problem of tuning. I don't expect Mr. Leishman to go into and describe it in detail but I think he should explain in a brief way what they are and let that explanation go into the record.

The Court: I was just simply trying to suggest a way that the history of the matter could be perhaps as thoroughly narrated on the witness stand as it can be. Certainly it can to this court because I am somewhat familiar with the extensive narratives that the experts are prone to use on both sides in these cases.

Mr. Flam: Your Honor, I appreciate that and that is why I say a mere reference to these patents be made so that your Honor will be apprised of

(Testimony of LeRoy J. Leishman.)

the fact that many attempts have been made, as I said in my opening statement, to provide an efficient and satisfactory automatic tuner. This is one [16] of the first crude attempts and I am through with it. I don't want to go on and say anything more about it or have the witness say anything more about it.

The Court: Well, with that statement, of course, the objection is overruled. That is Heath No. 17531 if you want to mark it in my copy of the book, Mr. Clerk.

The Clerk: Defendant's Exhibit B in evidence.

(The document referred to was marked Defendant's Exhibit B and received in evidence.)

Q. (By Mr. Flam): Now, Mr. Leishman, I think you mentioned the Jacke patent. Is that No. 6 in the book?

A. Yes, the Jacke patent is No. 6.

Q. Will you say just a few sentences about this particular system of tuning?

The Court: 2,297,152?

The Witness: That is right. This patent was issued in 1942 but it is an early one. Nevertheless, it will be noted on the first page of the drawings that the application was filed in November, 1928—14 years earlier.

Now, this patent is on an electrical system for performing the automatic tuning operations. I am not going into any detail in describing this except very generally. This is typical of a whole class and

(Testimony of LeRoy J. Leishman.)

I needn't mention any more of the things about it that apply to other motor driven tuners.

In Figure 8 there is a motor, 12, and the purpose of that [17] motor is to rotate the tuning mechanism and the dial to the proper positions for the different stations.

On the front of the set there is the usual plurality of buttons. When a given one of the buttons is pressed—and, incidentally, in Figures 1, 4 and 8 the button, for convenience, is shown in blue. When a given button is pressed two things happen. The motor is started moving and a member, 19, which can be seen in Figure 4 right by the button—it is the pivoted member that is tilted—when the button is pressed in, the member 19 is moved to a straight up and down position as will be seen in Figure 8 on the second page of the drawing. That member is standing straight up.

The Court: What is the number, Mr. Leishman?

The Witness: No. 19. Now on a dial that is connected by a system of gears to the tuning shaft—on a shaft, I should say that is connected by gears to the tuning shaft 9, there are a plurality of collars, No. 83, each of which carries a screw, 18, and it will be noticed that the screw 18 is in contact with the tappet 19 in Figure 8.

There is one of these screws for each tappet member. In other words, there is one for each station. Now, when the button is pressed in the motor starts to rotate and shaft 14, carrying all these collars 83 and the screws 18, turns around. But the rota-

(Testimony of LeRoy J. Leishman.)

tion is stopped when the screw 18 [18] associated with the given tappet 19 collides with the tap in the position shown in Figure 8.

As soon as that happens by mechanism that we don't need to describe, a circuit is made—that is, contacts are closed and the circuit is made that operates the solenoid mechanism shown at the right in Figure 8 and that causes the motor to stop. So, whenever any button is pressed that series of operations take place.

I think that is sufficient description of the Jacke patent.

Mr. Flam: I offer the Jacke patent in evidence, your Honor.

Mr. Lyon: May my objection stand to each of these patents without my repeating it, your Honor. I don't want to take up the time unnecessarily.

The Court: It may be so understood unless the court rules otherwise. The objection is overruled.

The Clerk: Defendant's Exhibit C in evidence.

(The document referred to was marked Defendant's Exhibit C and received in evidence.)

Q. (By Mr. Flam): Now, Mr. Leishman, the first patent that the complaint lists as alleged anticipation of your patent is found as No. 1 in this book of patents—the Kettell patent, No. 290.894.

Now, that patent was issued in 1883. Can you inform [19] the court what historical importance there is in connection with automatic tuning of this patent?

(Testimony of LeRoy J. Leishman.)

A. This patent, of course, doesn't deal directly with the problem of automatic tuning but it deals with the same general problem that is dealt with in automatic tuning.

In automatic tuning, as we have discussed, it is necessary to cause a rotatable member to turn to a predetermined angular position. In automatic tuning the device must be capable of being set so that the predetermined positions will be those desired by the user.

In Kettell's mechanism he had means for setting the minute hand of the clock exactly on the hour. It will be remembered that before electric clocks were common that many business houses had clocks which were automatically set on the hour. The Western Union operated a service of this type and the clocks were set by an impulse coming in hourly from the United States Observatory in Washington. And when that impulse would come in the minute hand would be automatically set on the straight up and down position by the Figure 12 and any slight variation—in fact any large variation, if it wasn't too great, would be compensated for and it operated in this manner. In Figure 1 it shows an electrical impulse causing the lever to move to the left. On the left side of the lever "E," it will be noted that there are two tappets, portions of which I have colored red for [20] easy identification.

If the minute hand happened to be in the position shown which is in line with the the 11:00 o'clock position, the lower tappet would engage the bottom

(Testimony of LeRoy J. Leishman.)

of the green rocker attached to the minute hand and when the engagement takes place of this lower portion of the tappet it will move the bottom of the green rocker to the left and the top portion of the green rocker will move to the right until the top portion would collide with the upper tappet shown in red. That would cause the rotation to stop. And of course the tappet would be moved—I mean the rocker would be moved to the straight up and down position and the hour hand would be turned to 12:00 o'clock.

Now, each hour that operation takes place and the clock is realigned with the straight up and down position when the signal comes in.

In Figure 2 a modification of this arrangement is shown. In this instance the rocker consists of a couple of little pins, "F" attached to a wheel, "G" and the plunger, "A," which performs the same function as the lever "F" moves the tappets into engagement with the rocker members "F." Of course, one of the rocker members, "F," will be engaged first, causing the wheel "G" to rotate until the other rocker member shown in green strikes the other tappet. So it will be observed here that you have a device for positioning shafts [21] and it operates just the same whether it is operated by a lever or by a plunger.

I guess that is sufficient explanation of that patent, isn't it, Mr. Flam?

Q. (By Mr. Flam): Yes. I offer the Kettell patent, Patent No. 390894 in evidence.

(Testimony of LeRoy J. Leishman.)

(The patent referred to was marked Defendant's Exhibit D, and was received in evidence.)

The Court: Same ruling.

Q. (By Mr. Flam): Mr. Leishman, will you turn to No. 36 in the book of patents, the Woodbridge patent No. 585996? A. I have it.

* * *

Q. (By Mr. Flam): Does that patent to Woodbridge have any pertinence to automatic tuning for radio sets, Mr. Leishman?

A. Well, it doesn't have any direct pertinence excepting that this device, like the Kettell patent, is concerned with the problem of angularly positioning a rotatable member. This device has a series of levers and each lever is so built that it will turn the rocker, "D," shown in green, to a predetermined angular position.

Of course this is a cash register device and it deals with numbers and there are only nine digits and the cipher. But this device as shown in Figure 1 has the rocker, "D," connected to a shaft, "D-3," and on that shaft "D-3" there is an arcuate member mounted which bears a plurality of numbers. And as the rocker "D" is turned to different angular positions different numbers will come into position indicated by "D-4." In the position shown here zero happens to be in that position, but for other angular positions it might be five or six or

(Testimony of LeRoy J. Leishman.)

four or some other number. And each of the levers has a tappet, a tappet portion on the inner side. One of them has been colored red [23] and each tappet is built at a definite angle so that when the lever, of which it is a part, is operated it will turn the rocker member "D" to the particular angular position for which the tappet has been constructed as an integral part of the lever.

So, there is nothing adjustable in this. You asked me what bearing it had upon automatic tuning. It couldn't be used as an automatic tuner because it is not adjustable. If you wanted to build an automatic tuner on this basis the manufacturer would have to make a tappet for every one of the different frequencies of all the stations in the United States so that the rocker would be turned to the proper positions.

Q. Do you know of any attempt to provide automatic tuning on this principle—that is, by using a rocker and tappets where the tappet is adjustable, before your patent was applied for?

A. Yes. Such a device was attempted by Marschalk. I think there is a patent of his——

Q. No. 22?

A. Yes, that is the patent and Figure 14 on page 3 of the drawing shows his arrangement.

We have a copy or we have a model here in court, built according to Figure 14.

Q. Now, first of all, do you know whether this Marschalk device was ever used commercially?

A. Not to my knowledge it never was.

(Testimony of LeRoy J. Leishman.)

Mr. Lyon: If your Honor please, I move to strike the answer as incompetent. The witness should answer yes or no, whether he knows or not. The answer leaves an improper inference when he says "not to his knowledge," when he doesn't state whether he has any knowledge or not.

The Court: It hasn't very much evidential value. The judge of the court is hearing what he says. That is, I have pretty good hearing. I don't attribute much value to any answer of that kind. You would have to explore his knowledge and that might be quite extensive. I don't think we want to go into each of these patents to that extent.

The Witness: I might say in this case that I am—I was for several years at least along about that period, in the automatic tuning art, quite familiar with what was being done, and I hadn't come in contact with it but it is possible it could have been used without my knowing it.

Q. (By Mr. Flam): You say you have a model of the Marschalk device here?

A. It was filed with my motion for summary judgment so it is in the court's possession.

(Mr. Flam tending object to Mr. Lyon.)

Mr. Lyon: I have seen it.

Q. (By Mr. Flam): Is this the model, Mr. Leishman? [25]

A. Yes; I recognize it from here.

The Court: Is that marked as an exhibit on the motion for summary judgment?

(Testimony of LeRoy J. Leishman.)

Mr. Flam: I would like to re-offer it or have it marked for identification until Mr. Leishman testifies about it. May I have it marked for identification?

The Court: Yes.

(The model referred to was marked as Defendant's Exhibit E, for identification.)

Q. (By Mr. Flam): Now, will you demonstrate to his Honor just how that Marschalk device is supposed to operate?

A. Yes. I might compare it briefly with the structure shown in the patent. It will be noted that this corresponds with the structure in the patent excepting that instead of having a solenoid arrangement on the end to pull the lever down electrically, that has been left off so we will have to press it down with our fingers, but otherwise it follows the structure shown in the patent.

This device unlike the Woodbridge arrangement attempts to provide an adjustable tappet so that the tappet can be adjusted to a given angular position, intended to turn the control shaft to the angular position that would be required for a station. The tappets, the members No. 44 in the patent—and it will be observed that we have such a tappet on this tuner, and the rocker in the patent [26] is No. 34 and we have a representation of that rocker on this device and then I have arranged a dial attached to the rocker that is an indicator which is coordinated with a dial containing a few calibrations.

(Testimony of LeRoy J. Leishman.)

Now, the way this is set it follows roughly the method that Mr. Flam set forth in the setting of my device. You turn the rocker to the angular position that is required. I am turning it now to a level position. And you press down on it and then the tappet takes the position of the rocker and then you tighten the set screw and then no matter what angular position the rocker has it is supposed to turn to that position. And if the rocker happens to be in a horizontal position that will take place, but if the rocker is tilted at all when the adjusting process takes place—suppose you tilt it that way and then you bring the tappet down into engagement with it—it will be noted that I am trying to arrange this so his Honor as well as Mr. Lyon can see it.

Mr. Lyon: Go ahead; I can see it.

The Witness: You push the lever down and you notice the rocker immediately turns as soon as you engage it—it turns as soon as you engage it.

Mr. Flam: May I ask you now, this process you are talking about now is the process of adjusting the position of the tappet in accordance with the position of the rocker [27] that has been assumed for a station?

A. That is right. It is the setting process. It is the process of initially setting the tappet to the position required for a given station. You tune in the station with the manual knob, which is represented by the knob on the left of the device when

(Testimony of LeRoy J. Leishman.)

the lever is facing you, and whenever it is turned to any angular position and you press down on it—I think this has been turned here unduly by mistake by somebody. I will get this in a little more reasonable arrangement. Whenever you have it—suppose when you put it at 160 and then you press down on this so that the tappet will take the position of the rocker it immediately flips around. It has turned now from 160 down to what would be about 140. If you turn the other end and then you press this down it moves from 55 up—it has moved over there to 85. It is a very difficult thing to adjust. And of course for accurate tuning the tappet must be positioned very accurately to the position of the rocker.

Q. Now, who made or was that model made under your supervision? A. Yes, it was.

Q. And does it conform generally with—does it conform with the Marschalk disclosure?

A. Yes.

Mr. Flam: I offer the model in evidence, your Honor. [28]

The Court: It will be received.

Mr. Lyon: If your Honor please, the model is only fragmentary. If it can be understood that it doesn't purport to be a complete illustration of what is in the Marschalk patent, all right. It doesn't have the condenser and so forth that are shown in the patent.

The Court: There doesn't seem to be any elec-

(Testimony of LeRoy J. Leishman.)

trical actuating mechanism in the model. Is that what you mean?

Mr. Lyon: Yes. And I think the absence of those parts may affect the testimony or the demonstration that the witness has given.

The Court: Well, they may or may not. I am not saying now whether they do or not.

The Witness: I might say in that regard, and this may be out of order, but your Honor can correct me if it is. In the Oklahoma case the other side presented a model with a condenser attached and it made very little difference. It had considered load and the device flipped around just as shown on this model.

The Court: The objection is overruled.

The Clerk: Defendant's Exhibit E in evidence.

(The model referred to was marked Defendant's Exhibit E, and was received in evidence.)

Q. (By Mr. Flam): Now, Mr. Leishman, you have demonstrated how this Marschalk device when operated would [29] not maintain a setting at the time when the tappet was to be adjusted in accordance with the position of the rocker. Would this difficulty be permissible in automatic tuning?

A. No, it wouldn't be permissible for that to occur even to a very small fraction of a degree. The rocker has to be very accurately set and of course for it to return to that position the tappet has to take the exact hairline position, if I may put it

(Testimony of LeRoy J. Leishman.)

that way. I think in the Associated case Dr. McKuhn himself called it, "a hairbreadth position."

Mr. Lyon: I object to the witness testifying as to what some other witness said.

The Court: Yes. He is here and I suppose he will say something about it later on, if we reach that point in the case. I don't think the witness should compare other witnesses on the stand. That is the function and responsibility of the court, to make comparisons and I find it is pretty hard to do in these patent cases.

Q. (By Mr. Flam): Do you have any charts or other means to explain to the court just what this accuracy involves?[30]

* * *

Q. (By Mr. Flam): Now, Mr. Leishman, you have produced a chart. Will you explain this matter of the necessity of extreme accuracy with the aid of the chart?

A. The usual rocker in an automatic tuner, having a rocker rotating about 60 degrees and the rocker is indicated by the long member shown in cross section and lines have been extended out to the rocker showing the numbers at the opposite end of the broadcast band.

The rocker is shown connected by a gear segment to a gear which is mounted on the shaft of a variable condenser. The irregularly shaped member shown by the full gear is the rotary blades of the condenser.

A condenser usually turns through 180 degrees

(Testimony of LeRoy J. Leishman.)

and the 180 degree rotation of the rotor blades or leaves must cover the entire broadcast band which extends from, roughly, 550 up to about 1700. It covers about 1,150 kilocycles—11,500 cycles.

Now if the rocker moves through the total possible angle of 60 degrees and the condenser moves through a total angle of 180 degrees the gear arrangement [31] must be three to one—must have a three to one ratio so that the 60-degree rotation of the rocker will take care of the 180 degree rotation of the condenser.

So, it will be observed then that all of the positions shown around the dial in the upper portion of the drawing, must be taken care of by the 60-degree rotation of the condenser. If 60 degrees are going to take care of the 1150 kilocycle wave band we can find out how many kilocycles will have to be represented by only one degree of movement of the rocker. If you divide 60 into 1150 you get a little over 19. So, that means that only 1 degree of movement of the rocker will result in a 19 kilocycle variation in tuning. Now, for proper tuning it is necessary to get within one kilocycle of the frequency on which the broadcasting station is broadcasting. Now, that means 1,000 cycles, so you should be within 1,000 cycles or 1 kilocycle of the frequency on which the broadcasting station is broadcasting and that would be 1/19th of a degree of rotation of the rocker and it must be accurately positioned. And if you are going to set the tappet so when it

(Testimony of LeRoy J. Leishman.)

comes down to tune in that station you must set that tappet very accurately to a position which must be accurate to 1/19th of one degree.

Mr. Flam: I offer the chart in evidence, your Honor.

The Court: It will be received as illustrative.

The Clerk: Defendant's Exhibit F in evidence.

(The chart referred to was marked Defendant's Exhibit F, and was received in evidence.)

Q. (By Mr. Flam): Is it necessary that an automatic tuner be easily adjusted?

A. Yes. It must be very easy to adjust because the stations must be set up by people out in the field and by the actual owners of the sets. If it was difficult to adjust and if extreme accuracy was required such a tuner couldn't possibly be used commercially.

Q. Have there been any other attempts beside that of Marschalk to use an adjustable tappet for automatic tuning devices?

A. Yes. The Zenith Corporation which owned that Heath patent operating by strings, put on the market in connection with their sets an automatic tuner described in a patent issued to Schaeffer. That is in this book of patents. I think it is No. 15.

Q. Do you happen to have a tuner that actually—the actual embodiment of a tuner shown in that patent, Mr. Leishman?

A. No, I don't. The only one that I had is now in evidence in the Oklahoma trial and I wasn't able

(Testimony of LeRoy J. Leishman.)

to procure another one. I tried. I had someone search to see if they could get one from the Zenith Corporation back in Chicago.

Mr. Lyon: We have one, your Honor. We will be glad to [33] furnish it to the witness right after lunch. We unfortunately did not bring it with us this morning.

* * *

Mr. Flam: If your Honor please, I offer in evidence the certified copy of the findings of fact and conclusions of law in the Oklahoma court, Civil Action No. 2155, entitled Leroy J. Leishman, plaintiff, versus The Richard Conover Company, a corporation, defendant. This is in the United States District Court for the Western District of Oklahoma, and those papers have been placed on file in this case as a part of the motion of defendant for summary judgment filed February 21, 1947.

The Court: It will be received.

* * *

The Clerk: Defendant's Exhibit G in evidence.

(The document referred to was marked Defendant's Exhibit G, and was received in evidence.)

Mr. Flam: Now, your Honor, in order that your Honor may understand the purpose of this testimony regarding numerous prior tuning devices, I call your Honor's attention to Judge Harrison's decision or opinion, to be found in Volume 1 of the

(Testimony of LeRoy J. Leishman.)

United States Circuit Court of Appeals for the Ninth Circuit, Case No. 9970, and I will read the two sentences that are pertinent. Judge Harrison said:

“The demand for an automatic tuning device did not become acute in the radio industry until the latter part of 1936 or the early part of 1937. This is demonstrated in many ways.

“The record discloses a dearth of inventions in this field.”

Now, this evidence that we are offering now is in contravention of that statement. There was not only not a [36] dearth but I think there was a veritable flood of inventions in this field.

The Court: Read that again, Mr. Flam. I have what purports to be the opinion in 36 Fed. Supp.

Mr. Flam: Maybe I can find it for you.

The Court: I have it before me but you may be reading from another part. I have here:

“Plaintiff’s first premise is that there had been a demand in the industry for a long period of time for a successful tuner. The facts in this case do not indicate an appreciable demand for a tuner until about the fall of 1936.”

Is that the same sentence?

Mr. Flam: No. I am trying to find the place where your Honor is reading. That comes about a page later than from where your Honor is reading.

The Court: Yes, I see it now.

Mr. Flam: The third paragraph beginning with “The demand” and so on.

(Testimony of LeRoy J. Leishman.)

The Court: Yes, I have it now.

Mr. Flam: Where your Honor was reading, of course, it states that the facts in this case do not indicate an appreciable demand and so on, and then it mentions the Schaeffer patent and the Flaherty patents and then it says:

“The evidence reveals no other issued patents [37] until 1937 and 1938 when the plaintiff obtained two patents.”

The Court: Yes.

Q. (By Mr. Flam): Now, Mr. Leishman, I think you are ready to discuss the Schaefer patent which is found as No. 14 in the book of patents.

A. May I have the question read that I was asked to answer?

Q. I think I asked you whether you knew of any other attempts to provide an adjustable rocker or adjustable tappets for automatic tuning. I think you mentioned the Schaeffer patent.

A. Yes. The Schaeffer patent was another attempt along this line and the Schaefer patent was owned by the Zenith Corporation as indicated on the record itself—the patent itself. The Schaefer patent was filed in 1928 and it shows a mechanism for that purpose. And Mr. Lyon stated before the noon recess that he had a tuner here that we could use as a model, that I could use in my explanation.

Mr. Lyon: I have two tuners, your Honor. One of them is a complete tuner put out by the Zenith Corporation, and the other one is the same thing

(Testimony of LeRoy J. Leishman.)

with all the parts on the inside removed except one operating unit. This latter one was Defendant's Exhibit A in the case before Judge Harrison. The other one I don't remember whether it was before Judge [38] Harrison or not, but they are just the same devices except one has all the parts, all the duplicate parts in it and the other has just the single operating parts.

The Court: You had better let the witness use the one which he desires to use.

The Witness: I would like first to use the complete one and then maybe I might revert to the other one.

Q. (By Mr. Flam): I will place both of them before you, Mr. Leishman.

The Court: Perhaps they had better be marked for identification.

Mr. Flam: I would like to have these two models marked for identification as two exhibits.

The Clerk: Defendant's Exhibits H and I for identification.

(The models referred to were marked Defendant's Exhibits H and I for identification.)

The Court: Which is which?

Mr. Flam: H will be the complete device and the incomplete device, if I may call it that for short, will be Exhibit I.

The Court: Very well.

The Witness: This is a tuner that I will have to explain in a little detail because the object I think

(Testimony of LeRoy J. Leishman.)
of Mr. Flam's question, is to show the unsatisfactory nature of the [39] attempted solution of the difficulty exhibited in the Marschalk device or the difficulties encountered in providing an adjustable tappet.

Q. (By Mr. Flam): I may say for the court's benefit that this is one of the patents cited in the complaint of the plaintiff.

The Court: Claimed to be anticipatory?

Mr. Lyon: Yes, your Honor, and to show the state of the art on the question of invention.

* * *

The Witness: This is all right. Now, first I think it might be well to refer to Figure 2 of the patent. We have that upside down but I put it that way on purpose. That is the only way we can see it. In order to get a proper conception of the whole thing perhaps I had better turn it right side up first. It is now right side up and it will be observed that it corresponds generally with Figure 2 on the second page of the drawing of the Heath patent.

Q. (By Mr. Flam): You mean the Schaefer patent?

A. Yes, the Schaefer patent. Now, Figure 3 is a cross section through the center of the device longitudinally, [40] a longitudinal cross section, and we see other parts of the mechanism in Figures 1 and 4. In Figure 2 there is a lever containing or supporting, rather, a plunger portion on the bottom attached to it. The lever supports a tappet—tappet

(Testimony of LeRoy J. Leishman.)

member 53—I beg your pardon, 53 is the plunger portion attached to the lever and the tappet is 56.

Now, each of the levers carry, on the projection or plunger portion on the bottom, one of these tappets, 56, which is arranged to be adjustable.

Now, the thing that Schaefer is trying to adjust angularly is the shaft No. 1 shown in Figure 1 on the lefthand side—that is the control shaft of the condenser on Figure 1—the left-hand side of Figure 1.

Now, that control shaft is connected by means of a coupling, or universal joint, 11, to another shaft, 10, and that in turn is connected by a universal coupler, 12, to another shaft, 9. That will be seen just below a little set screw. The figure 9 is just to the right of the coupling device 12.

The shaft 9 extends all the way across the tuner. The tuning mechanism proper is the portion shown in the right hand half of Figure 1.

Shaft 9 will be seen also in Figure 4. It is shown in cross section. On Shaft 9 there is mounted a gear, 24, at one end of the tuner, and there is another [41] similar gear, 25, at the other end of the tuner.

The Court: The end of the long shaft there?

The Witness: Yes, just inside of the case. It can be seen only by glancing down from the top.

Now, there are two of those gears. Maybe your Honor can see that gear down there.

The Court: Yes, I see it.

(Testimony of LeRoy J. Leishman.)

The Witness: There is one just like it on the other side. Now meshing with the gear 24, as will be seen in Figure 4, are two racks, 26 and 27, on opposite sides of the gear 24.

Now, those racks are visible in the tuner and they can be seen in Figure 1. They are shown in cross-section.

Just below the gear 24 is a cross-section of the rack 26, and just above the gear 24 the rack 27 is shown in cross-section.

At the opposite side of the tuner, over on the right-hand end, there is another similar pair of racks. These racks are connected both at—one rack at one end of the tuner is connected to a corresponding rack at the other end of the tuner and the other two racks are similarly connected.

It will be noticed in Figure 4 that the tappet is in engagement with crossbar, 32. That is the rack that is shown in the uppermost position. It is connected to the [42] member, 32, with which the tappet is in engagement and then at the bottom of rack 27 there is another cross member, 34, which the tappet is also engaging.

Those cross members connect up with racks on the opposite side of the tuner. The upper ends of the racks 26 and 27, are also connected to cross members of this same kind.

The cross members at the bottom, cross members 32 and 34, can be seen very clearly in this model. That connects one rack and the other crossbar con-

(Testimony of LeRoy J. Leishman.)

nects the other two racks, and the upper ends are connected in the same way.

Now, it will be observed here then that between Schaefer's tappet, 56, and the shaft, 29, he has interposed 10 movable parts.

Now, this is rather important, I think, to show the nature of this structure. These parts I will designate and enumerate. There are two gears, 24. There are two racks, 26 and 27, on one end or side of the tuner. There are two racks, 29 and 28, on the other end or side of the tuner. That is six parts that we have now.

Then there are the two crossbars to which I called your Honor's attention that run from one side of the tuner to the other connecting the racks. The crossbars, 32 and 34—that makes eight intervening parts. And the corresponding crossbars on the top make 10. So, there are [43] 10 intervening parts between the tappet, 56, in the Schaefer device and the shaft 9 that he is trying to turn to a predetermined angular position.

He has to have guides for these rectilinear racks. All devices that move in a straight line rectilinearly, you have to have guides. These are seen in Figure 3 at the top—at the top of Figure 3 there are two guides, 30, one for each rack, and at the bottom there are two more guides, 30. You have the same reference numerals.

At the opposite side of the tuner there are two identical guides—that is, I mean four identical

(Testimony of LeRoy J. Leishman.)

guides, two for each rack. So, that makes eight guides in all. So, (18) eighteen additional parts have been added. Ten of them movable between the tappet and the rotatable member.

The Schaefer device does not exhibit the peculiarity shown in the Marschalk mechanism of flipping around as soon as you press the tappet firmly in engagement with the rocker, when the rocker is tilted, but to avoid that difficulty these intervening parts have been used.

In the other tuner that Mr. Lyon has supplied me, some of those intervening parts have been omitted, but there are still most of them in the mechanism. There are the two gears on opposite sides but instead of having one rack on one side and one rack on the other side connected by one member they have made the two racks, two companion racks on [44] the opposite side integral with the cross piece and the bottom crossbar is used, and that is also true on the opposite side.

There are still a large number of intervening parts between the tappet which we can see suspended from the plunger portion of the lever. This is the tappet. There are still a good many parts interposed between that and the shaft which Schaefer is trying to position, and by that interposing and the particular mechanical action there the difficulty has been avoided. Is that sufficient explanation of the Schaefer device?

Q. (By Mr. Flam): Have you explained how

(Testimony of LeRoy J. Leishman.)

the Schaefer device works generally? How it takes—how the tappets may be set and so on?

A. I have not but I will be glad to do that.

On this device you loosen the set screw or cap on the top of the lever. I will explain this on the single lever model that was introduced.

You loosen the screw and you tune the station in manually. You get it very accurate, to the position you want to have it and then you press down on the lever in the manner mentioned by Mr. Lyon in his description of the tuner in the re-issue patent, and then while you are holding it down so that the tappet takes the position of the racks, in this case the members that move up and down, there is no [45] rotatable rocker here, and while you are holding it firmly in engagement so that the tappet assumes a definite angular position you tighten the screw and that locks the cam in position and then no matter what position the tuner is tuned to, no matter what station is tuned in, whenever you press the lever it will return to the position that it had during the initial setting process.

Q. When was the Zenith tuner used in radio service, do you know?

A. As I remember it, it was about 1927 and 1928. It was used for about two years.

Q. Do you know whether it was used after that?

A. No, I don't. It disappeared from the market at that time and it was never used again.

Q. That is, when I say the "Zenith tuner" you

(Testimony of LeRoy J. Leishman.)

understood it was like those tuners corresponding to the Exhibits H and I for identification, is that right?

A. I don't know what numbers they have been given.

Q. Those that you have in front of you?

A. If these are H and I, this structure did not reappear on the market after the two years when it was initially used.

Q. Aside from the Marschalk device and this Schaefer device, were any other attempts made to use an adjustable tappet for automatic tuning? [46]

A. Yes, there were two that I know of.

Q. What were they?

A. One of them was Sofietti in Italy, who applied for a patent in Luxembourg before my original patent issued in the United States, and then he filed an application in the United States under the International Convention, and that is here in the book.

Q. Is that No. 34 in the book?

A. Yes, that is No. 34. The mechanism there is shown in Figure 6 and in conformity with the color notation system that we have been using, the rocker is shown in green and the tappet members in red and the manually operable portion is shown in blue.

In this device a tappet arrangement has been used which is never free to be turned and therefore the difficulty exhibited in a simple movable tappet doesn't occur. But in order to get away from the

(Testimony of LeRoy J. Leishman.)

difficulty it was necessary to use two tappets that are very difficult to adjust.

Now, as explained in the specification 6 prime and 6 double prime, or they may be screws—may be threaded members. So in this case you have to tune in the station which rotates the rocker 4 prime and 4 double prime to give an angular position and then you screw down the screws until they touch. One difficulty here will be that you would have to have six prime—the upper screw-retracted almost [47] completely so that you could turn 6 double prime, because as it turns around and rotates it would interfere with screw 6 prime.

Then after you have 6 double prime in about the position you think will be satisfactory, then you can screw down the upper screw, 6 prime, until it engages the rocker and then by a spring-means, not shown but mentioned, however, I think in the specification, the button is pushed out to a rest position and then, of course, other buttons can tune in the station or you can tune it manually in the usual way. But whenever the button 5 is again pressed, the tappets, having been adjusted in this way, will return the rocker shown in green and indicated by the numerals 4 prime and 4 double prime to the position for which they have been adjusted in that cumbersome manner.

Is that sufficient explanation of that patent?

Q. Yes. Can you state whether it was ever put into commercial use?

(Testimony of LeRoy J. Leishman.)

A. No, it never was.

Mr. Lyon: If your Honor please, here is a patent in Luxembourg. I think some foundation should be laid before the witness answers that question.

The Court: Yes, I think so. The copy that I have here shows that Mr. Leishman was the assignee of that patent.

Mr. Flam: Yes. [48]

The Witness: I don't know whether it was ever used in Luxembourg. I wasn't the assignee of the Luxembourg application. I was the assignee of the United States patent, and as far as I know it wasn't used. It could have been used without my knowledge. Frequently of late tuners have been coming on the market and I haven't known about them until a declaratory judgment suit has been filed against me to have the court declare it isn't an infringement.

Mr. Flam: I offer the Sofietti patent No. 2388581, issued November 6th, 1945, in evidence.

* * *

The Clerk: Defendant's Exhibit J in evidence.

(The document referred to was marked Defendant's Exhibit J, and was received in evidence.)

Q. (By Mr. Flam): You mentioned one other attempt to use an adjustable tappet for an automatic tuner.

A. That was the Lane & Mackey structure, the

(Testimony of LeRoy J. Leishman.)

file wrapper of which I introduced in evidence for the motion of summary judgment and is already on file.

Q. Is that the file history you are talking about?

A. Yes. This is the file wrapper of it. This is the certified file wrapper, incidentally certified by the Patent Office, of application Serial No. 117163, filed on November 29th, 1937, by Guy M. Lane and Henry Mackey.

Q. What is pertinent in that file wrapper to this question?

A. The general disclosure which can be seen satisfactorily in Figures 2, 3 and 4 on the last page.

Q. Do you have convenient copies of that for the court?

A. Yes, I had positive photostats made from the negatives in the file wrapper and I have four copies here, so we can all look at a copy.

In Figure 3 the rocker is No. 13, and it has been colored green.

Q. That may be held horizontally like this? [53]

A. Yes, look at it horizontally. I beg your pardon, the rocker is No. 11. The two opposite ends of it are indicated by 12 and 13. The tappet is No. 19 shown in red.

This device has a tappet provided with gear teeth on the periphery and these gear teeth engage with a worm gear, 46, which may be turned and adjusted by means of the screw, 51.

Now, with this device you see the tappet is still

(Testimony of LeRoy J. Leishman.)

not free. It is kept in constant restraint so that the difficulties exhibited in trying to make it an adjustable tappet do not occur when the rocker is tilted.

This is a very difficult piece of mechanism to adjust because as you can see if you adjusted the rocker and then pushed the rocker in engagement with the tappet it couldn't possibly assume the position of the rocker, so what you have to do is push the whole plunger mechanism, 29, into engagement with the rocker and then rotate the whole thing while engaged that way by means of screw, 51. That causes the worm, 46, to rotate, and that engages the teeth, 49, and causes the tappet to turn. And then when you finally tune in the station in that manner you have adjusted the tappet.

I think that is probably sufficient explanation of this mechanism.

Mr. Flam: I offer the sheet, photostatic copy of [54] Figures 2, 3 and 4 of the file wrapper in evidence. If there is any objection to it being a copy I can, of course, offer the entire exhibit in evidence.

* * *

The Clerk: Defendant's Exhibit K in evidence.

(The document referred to was marked Defendant's Exhibit K and received in evidence.)

Mr. Flam: Will it help your Honor to identify the drawing as a part of that exhibit?

The Court: You might mark that with a number. What is the file wrapper marked, Mr. Clerk?

(Testimony of LeRoy J. Leishman.)

The Clerk: Exhibit K, your Honor.

The Court: Then mark that Exhibit K-1.

(The document referred to was marked Defendant's Exhibit K-1 and received in evidence.)

Q. (By Mr. Flam): I believe you demonstrated this Exhibit E to the court and explained how difficult it was to adjust the tappet in accordance with the position of the rocker.

Now, what is your solution, if any, to that difficulty?

A. Why, I figured that the difficulty could be overcome by making it—by making the axis of the tappet and the axis of the rocker coincide—that is to make the one axis coaxial with the axis of the other. [60]

Q. Did you have any difficulty in doing that?

A. Why, I have a model that will show what was done. Of course it can be seen by the Marschalk device and by the rockers in the Sofietti and Lane & Mackey exhibits that the one tappet engages the surface of the rocker and, of course, two bodies can't occupy the same position at the same time, so in order to get the axis of one coaxial with the other I made an open rocker. I have an open rocker here and I prepared a little support to rest it on and that will show what I did.

I made an opening in the rocker in order to achieve this coaxiality and then I shaped the tappet so that when it is brought into an engagement with

(Testimony of LeRoy J. Leishman.)

the rocker it has such a shape that the axis can sit down in the rocker. In other words I cut away the sides of the tappet to make it possible for the axis to set down inside of the axis of the rocker so that the two axes could become coaxial. And it will be noticed on this device that that kind of difficulty doesn't occur. You can press down there as hard as you want and you don't have any of that trouble occurring.

Now, here is a non-coaxial arrangement and you press that down and it immediately flips around the same as the Marschalk device, but this coaxial arrangement solved the difficulty. You see you have no difficulty at all.

Maybe your Honor would like to try that. [61]

The Court: No, I watched you demonstrate it. Let us have those marked for identification.

The Witness: I think all four of these ought to be marked individually.

Mr. Flam: I would suggest that the base be marked for identification with one main number.

The Court: Marked serially.

The Clerk: The base will be Exhibit L for identification.

The Court: And the others will be L-1, L-2 and so forth.

Mr. Flam: Then let us identify them by name. The rocker will be L-1.

The Witness: The rocker is L-1.

Mr. Flam: And what we will call the coaxial tappet will be marked L-2 and the non-coaxial tappet will be marked L-3.

(Testimony of LeRoy J. Leishman.)

(The documents referred to were marked Defendant's Exhibits L, L-1, L-2 and L-3 for identification.)

* * *

Q. (By Mr. Flam): Do you have a chart that graphically illustrates the coaxial arrangement of the axis of the tappet and the axis of the rocker?

A. Yes, I have a single drawing here and I have a large chart which we could put up so everybody could see it. May I go get it?

The Court: Yes.

The Witness: I have the chart here. It will be difficult to attach that. Do you want me to explain the chart?

Q. (By Mr. Flam): Yes.

A. The rocker similar to the one on the exhibit that we have just shown, is at the top and then the axis is shown in dotted lines and the axis is actually cut away—there is no actual axle extending across there. We might refer to that as a phantom axis. That term was used in connection with another tuner in which the axis was cut away.

And then in the center of the device we have the tappet and the axis of the tappet is shown.

And then in the bottom figure it is shown how the axis of the tappet and the axis of the rocker coincides so that they form a single line when the two are in engagement. [63]

Mr. Flam: I offer the model, Exhibits L and

(Testimony of LeRoy J. Leishman.)

L-1, L-2 and L-3 in evidence as well as the chart showing the corelation of the parts.

The Clerk: Do you want to have that given a separate number?

Mr. Flam: Yes, a separate number. Do you have any more small sheets?

The Witness: I just have this one.

The Clerk: Marked Defendant's Exhibit M in evidence and the others are Exhibits L, L-1, L-2 and L-3 in evidence.

(The documents referred to were marked L, L-1, L-2 and L-3 and M received in evidence.)

* * *

The Court: So ordered. What was the number given the chart, Mr. Clerk?

The Clerk: Defendant's Exhibit M.

The Court: Why not give it a number in the L series. Make it L-4.

(The document heretofore marked Defendant's Exhibit M in evidence is now marked Defendant's Exhibit L-4 in evidence.)

Q. (By Mr. Flam): Referring to your re-issue patent, Defendant's Exhibit A, will you explain the double rocker and [64] double tappet construction for tuning both radio sets and television sets simultaneously?

A. Yes. In the central figure the tappet, 61, is cut away in the same general manner as the tappet that we have just been discussing on the last exhibit.

(Testimony of LeRoy J. Leishman.)

And the rocker, 48, is shown and these are shown as mounted on a little plunger, 57, attached to a lever, F, which moves into—it moves it into position. And it will be observed in this drawing that there is a second rocker, 54, shown in Figure 1 and also Figure 2, which is arranged coaxially and attached to a different shaft.

Rocker 48 is attached to shafts, which as stated in the patent are supposed to be connected to a radio tuning mechanism such as a condenser, and the other rocker, 54, is connected by means of its hub, 55, to a shaft, 25, which is as explained in the patent, connected to the television tuner.

Two different tappets here are shown mounted on the lever so that the single operation of the plunger, 57, and its insertion down into the position shown, and each tappet operates in the same way. So, in this mechanism here I arranged it so I could tune both the television set and the radio set in a single operation regardless of what angular positions the control shafts might need to be turned to. [65]

Q. (By Mr. Flam): Do you have a model of your tuner for tuning a radio set as shown or made in accordance with the drawing of your patent in suit?

A. Yes, there is one in the carton on the table.

(Mr. Flam exhibiting device to Mr. Lyon.)

Mr. Lyon: If your Honor please, if this model is offered as built in accordance with the patent in

(Testimony of LeRoy J. Leishman.)

suit I want to register my objection because I think it is perfectly obvious that it lacks the television rocker and the television tappet in that system.

If this is only offered to show some fragment of the parts that are illustrated in the patent that is a different matter.

This is an important question in the case because we contend that under the Circuit Court of Appeals decision an attempt to construe this patent to cover just a radio tuner divorced from and apart from and in the absence of a television tuner is an attempt to cover a different invention in the re-issue, for the reasons that Judge Mathews gave in connection with his decision on the fact that the patent was, the original patent, was limited to levers as distinguished from plungers. By the same law and same authorities the original patent was limited to a combination television and radio set and each and every claim, except claim 5, admittedly was so limited and Judge Mathews thus [66] has said claim 5 is not to be considered because it was disclaimed.

So, attempting to re-issue a patent to cover what would be embodied in this device which is just tendered to the court, would be right in the teeth of Judge Mathews' decision and I think this should not be offered as a correct illustration of the device shown in the drawings of the re-issue patent because it obviously is not.

Mr. Flam: May I say a few words, your Honor?

(Testimony of LeRoy J. Leishman.)

The Court: Yes.

Mr. Flam: In the first place I think your Honor has read Judge Mathews' decision. In that decision what Judge Mathews was complaining about was the fact that the patent attempted to be construed by Mr. Leishman covered a device in which either a lever or plunger would be used for operating the rocker.

Now, I don't remember any valid statement or any weighty statement in that decision which says that the invention must be confined to a double rocker and double tappet arrangement. I don't think that was intended at all by Judge Mathews.

In fact Mr. Lyon's own memorandum in opposition to the motion for summary judgment, at page 12:

"The devices complained of herein are radio receivers only and thus concern only a portion of [67] the mechanism of the patent in suit."

Now, on page 13 he says that the patent in suit consists essentially of three elements, a lever, an adjustable mounting, a tappet which is movable by the lever in contact with the rocker attached to the shaft to be positioned by a movement of the lever.

Now, Mr. Lyon comes along and says: "Well, the patent must be construed to include at all times both rockers and both tappets."

The best criterion for that, of course, is a consideration of the claim and none of the claims here

(Testimony of LeRoy J. Leishman.)

in issue include more than one rocker and one tappet.

Mr. Lyon: Your Honor, Mr. Flam has questioned the statement in Judge Mathews' opinion that I was referring to. I am referring to Judge Mathews' opinion on the first case—that was the Associated case which is reported at 137 Fed. 2d, 722, and in the right-hand column, on page 723, Judge Mathews says: "Thus a re-issue patent must be for the same invention as the original patent otherwise it is invalid. An original patent and a re-issue patent are not for the same invention unless what is covered by the re-issue was disclosed in the original and was intended to have been covered and secured by the original," and citing some cases in the Supreme Court "and this intention must appear from the face of the instrument." That is quoted from a decision [68] in the Supreme Court that is cited. "Hence the questions here to be considered are whether what is covered by claims 7 and 11 of the re-issue patent was disclosed in the original patent and whether it appears from the face of the original that was covered by claims 7 to 11 of the re-issue was intended to have been covered and secured by the original."

Now, our point is that—and then he applied that law to this difference between levers and plungers.

Now, our point is that this original patent and the original patent is not before your Honor except inferentially, but that the original patent contained

(Testimony of LeRoy J. Leishman.)

no statement of any kind indicating that it intended to cover to claim a device which did not have the combination with the television mechanism and that is the very thing that has been left out of this model.

Mr. Flam: Where in that decision, Mr. Lyon, is there a statement by Judge Mathews that the patent must be confined to two rockers and two tappets?

Mr. Lyon: Judge Mathews did not pass on that point but he applied the same law that I am relying upon as the basis for his decision. He took the case and took the points that the original patent was intended to be limited to. The claims were all intended to be limited to a tuner which was operated with levers and he did not consider claim [69] 5 in coming to that conclusion because claim 5 had been disclaimed. But he announced what the law was.

Now then if you apply the same law to the attempt now to secure by a re-issue patent a patent on a single radio tuner where the original claims all called for two tappets and two rockers except claim 5 which was not to be considered, why, his statement, the legal principle that he renounces governs exactly. In other words, there was no claim in this original patent which were claims 1 to 6, your Honor, as you can see them in the re-issue, there was no claim that didn't call for the two rockers and the two tappets except claim 5 and that claim is a nullity and must be treated as if it had never

(Testimony of LeRoy J. Leishman.)

been in the patent according to Judge Mathews' decision.

The Court: I think I will overrule the objection.

Mr. Flam: Just a minute. I might as well have this marked for identification.

The Clerk: Defendant's Exhibit M for identification.

(The document referred to was marked Defendant's Exhibit M for identification.)

Q. (By Mr. Flam): I think the model you are going to talk about now is marked Defendant's Exhibit M for identification. Will you please demonstrate that model to the court and explain it?

A. On this model we have a rocker arranged with an [70] opening similar to the rocker in the previous exhibit No. L-1, and the tappet is cut away and so shaped that the axis can come right into line with the axis of the roller in the manner demonstrated with Defendant's tappet, Exhibit L-2.

Now, on this device Exhibit M, the tappet is mounted on a plunger portion extending down from the lever.

Q. By "this device" you mean Exhibit——

A. Exhibit M. In the combination tuner shown in the patent, an extra tappet was mounted on the other side to co-act with another rocker shown on this model. But as the patent states the device was intended to be used for tuning in either a radio set or a television set or both. So, it was intended that you could use it this way if you are going to tune

(Testimony of LeRoy J. Leishman.)

in a radio set and this way the rocker that was identified as intended for tuning a radio set, although of course the other one could have been used just as well. Now, when this rocker is tilted and the tappet is loosened so that it is free to turn and take the position of the rocker you can put the rocker in any position you desire and bring this down and there isn't the slightest tendency for the tappet to turn. And the rocker will take or, the tappet which you are attempting to adjust will take the exact position of that rocker, certainly well within the limits required which this morning we demonstrated [71] to be $1/19$ of one degree. This is far more accurate than that. It can be observed. So, after the rocker has been positioned and the station tuned in and you press down on the button the tappet takes that position. Then you tighten it up and then no matter what station you have tuned in whenever you press that down again the rocker will return to the adjusted position with absolute accuracy and having the selectivity so far as mechanics are concerned, that we were discussing here this morning. Sets have had to become more and more selective to take care of more and more stations and the significance of this has become more and more important. I think that is sufficient explanation of the model, Mr. Flam, unless you have something else you want to ask.

Mr. Flam: I offer the model in evidence.

The Court: It will be received.

(Testimony of LeRoy J. Leishman.)

(The document referred to was marked Defendant's Exhibit M and received in evidence.)

Mr. Lyon: My objection applies to the re-offer, your Honor, without repeating it.

The Court: Yes.

Q. (By Mr. Flam): Now, in connection with that model, Mr. Leishman, does it make any difference in your device whether the tappet is moved in an arc to contact the rocker or whether it is moved in a straight line to contact the [72] rocker?

Mr. Lyon: I object to that, your Honor. The witness is asked if it makes any difference in his device. We have a decision here, two decisions of the Circuit Court of Appeals on the point and it is asking him for a conclusion without the facts being stated on which the conclusion is to be based and I think it is a conclusion of law when he asks him if it makes any difference in his device. I don't know exactly. It is not a very illuminating question, but if it is intended to be a statement derogatory of the court of appeal's decisions, why, I object to it as out of order.

Mr. Flam: I am not offering it in derogation of any opinion. I am trying to show here that there are other factors not considered by the Circuit Court of Appeals which makes it necessary for them to revise that opinion.

The Court: Objection overruled.

(Testimony of LeRoy J. Leishman.)

Q. (By Mr. Flam): Will you answer the question?

A. No, it makes no difference at all by what route or course the tappet comes into engagement with the rocker. [73]

I think that the models in the L series containing the rocker L-1 and the tappet L-2 demonstrate that you can bring it down in an arc or you can bring it down straight or you can bring it down from the other side and it is all the same story. It doesn't make any difference. It doesn't make a bit of difference to my device in the operation of the device, what path the tappet takes to and from that coaxial position. The point is, you have got to have it there when the adjustment is made and then you have got to move it out of the way so that the rocker can turn and when the device is to be tuned again the rocker has to be pushed down into engagement and the route, I think, is immaterial. We have a chart here which further illustrates that point.

Q. Will you demonstrate from the chart that point? A. Yes, sir.

Q. If you will.

A. Yes. (Showing document to Mr. Lyon.)

Q. (By Mr. Flam): May I ask the clerk to mark this for identification?

Mr. Lyon: May I see it for a moment?

The Court: What does the chart purport to be? I was looking at one of these models.

Mr. Flam: The title of the chart is the path of

(Testimony of LeRoy J. Leishman.)

the tappets to and from the coaxial position is optional with [74] the designer and I am having it marked for identification.

The Court: I suppose it is just illustrative of what the defendant has testified to?

Mr. Flam: Yes; and there are other points I would like to show.

The Court: It may be so marked, Mr. Clerk.

Mr. Lyon: May it be subject to the same objection, your Honor, that I made with reference to the last question?

The Court: Yes.

Mr. Lyon: Very well, your Honor.

The Court: This is simply used as an illustration but it is a part of his answer and you objected to it.

Mr. Lyon: Yes.

The Court: And I suppose your objection goes to this also?

Mr. Lyon: Yes.

The Clerk: Defendant's Exhibit N for identification.

(The document referred to was marked Defendant's Exhibit N, for identification.)

Q. (By Mr. Flam): Go ahead and explain it, Mr. Leishman.

A. The second figure from the bottom, it will be noticed, is the figure, the Figure 2 of the patent, colored so that the tappet is identified by the red color and the rocker is green and the lever or manual operable member is in [75] blue, and the path

(Testimony of LeRoy J. Leishman.)

that the rocker takes to and from the coaxial position is indicated by the curvilinear line passing through the center of the tappet and center of the rocker. Of course that curvilinear line will be an arc around the pivot as the center. Now, suppose you just turn the tuner around the other way. Then it would look like the figure at the bottom on this chart and you would have—and the path of the tappet would be exactly opposite from what the path is when it is oriented in the position shown in the patent. And I think it is obvious that it makes no difference to the operation of my device if you turn it around and have it face north instead of south and in that case the curvilinear path turns to the right in one case and turns to the left in another case and yet the device operates precisely the same and it makes no difference to the operation of the device whether the path turns to the left or to the right.

I think it is clear that any intermediate position would not affect the operation of the tappet. Then I have shown other modifications which I think also are obviously operable.

I have changed the shape of the lever here and pivoted the lever above the position shown in the patent drawing. In that case the path that the tappet would take to and from the coaxial position is indicated by the curvilinear [76] line passing through the center of the tappet in the second figure from the top on the chart.

(Testimony of LeRoy J. Leishman.)

In the figure at the top on this chart the lever has been extended and the curvilinear path is more nearly straight, but in all cases the tappet can be moved out of engagement with the rocker and it can be moved back into engagement with the rocker and no matter where you put the pivot of the lever the same thing will take place, whether you put it on this side or whether you put it on that side or whatever other guides you might make for the plunger portion—this portion of the tappet that extends down is a plunger, a reciprocating member that goes in and out of the rocker. Then on these flaps I have arranged the—I am in my own way here no matter how I turn. Mr. Flam, will you hold this one back for me if you don't mind? I have arranged it here so that you can just move another portion of the drawing so that it can be superimposed over the patent, over the enlargement from the patent drawing and that shows the tappet mounted on a plunger and, of course, that will take it straight up and down. It moves from the coaxial position shown out of engagement, and when you press it down it will move it back into engagement in a straight path which is the exact average between the path shown in the third figure from the top on this chart and the figure at the bottom on the chart. In this case guides [77] have been provided both above the rocker—the guides to keep the tappet moving in a rectilinear path instead of being curvilinear. In the other drawing it is rec-

(Testimony of LeRoy J. Leishman.)

tilinear and then on the other flap we have drawn the plunger so it passes all the way through the rocker, but the tappet in this case is shown mounted on the plunger and we have the guides above in this case and the other one is below the rocker. But the motion is just the same and I think that chart thoroughly demonstrates that it is absolutely immaterial to the operation of the device whether the tappet moves away from its coaxial position and back again in a curved path or how big the curve is and what direction the curve goes or whether it is a straight line which is an average of all the curves.

Mr. Flam: I offer the chart in evidence.

Mr. Lyon: Same objection as previously noted when the chart was offered, your Honor.

The Court: Same ruling. Objection overruled.

The Clerk: Defendant's Exhibit N in evidence.

(The chart referred to was marked Defendant's Exhibit N, and was received in evidence.)

* * *

Q. (By Mr. Flam): Do you have a file wrapper of the application which this——

A. The file wrapper of the original application in which the disclosure was first made is already on file as one of the exhibits in the motion for summary judgment.

The Court: I thought I saw it here.

* * *

(Testimony of LeRoy J. Leishman.)

The Court: It will be received and marked filed.

(The document referred to was marked Defendant's Exhibit O, and was received in evidence.) [81]

* * *

Mr. Flam: Your Honor, I offer in evidence the file wrapper and contents of Patent No. 2,108,538 granted February 15th, 1938, a certified copy.

The Court: Is that one of the divisional procedures?

Mr. Lyon: There is no objection to that. That is the application for the original of the patent in suit.

The Court: So ordered.

The Clerk: Defendant's Exhibit P in evidence.

(The file wrapper referred to was marked Defendant's Exhibit P, and was received in evidence.) [82]

* * *

Q. (By Mr. Flam): Can you point out to the court—I will withdraw that.

I offer in evidence a copy of that same patent.

The Court: A printed copy, is it?

Mr. Flam: Printed copy, yes.

The Court: It will be received.

(The document referred to was Marked Defendant's Exhibit Q, and was received in evidence.) [83]

* * *

(Testimony of LeRoy J. Leishman.)

Q. (By Mr. Flam): Mr. Leishman, in your testimony in connection with the Marschalk device, Defendant's Exhibit E, you show that the undesired rotation takes place when the tappet is freely pivoted and pressing upon the rotatable rocker on both sides of its axis and at the same time. I think you explained that you prevented that undesirable rotation by shaping and arranging a tappet and rocker so that they are coaxial when they are in this position in which the freely pivoted tappet presses upon both sides of the rocker.

Do you know of any other case in the automatic tuning art in which undesirable rotation is taking place when one freely pivoted member is pressed upon a rotated member, upon both sides of its rotational axis at the same time and that this undesirable rotation is eliminated by making [86] the parts to work coaxially? A. No, I don't.

Q. Do you know of any other case in any art in which undesirable rotation is taking place when one freely pivoted member is pressed upon another member on both sides of its axis at the same time and the undesired rotation was stopped by making the parts coaxial?

A. No, I don't know of anything of that kind in any art.

Q. Have rotatable parts ever been made coaxially for any other purpose?

A. Yes, they have been made coaxially for various purposes.

(Testimony of LeRoy J. Leishman.)

Q. What, for example?

A. Well, I think the most common reason for making parts coaxial is when you have two shafts coupled together and you want them both to turn. If they are not absolutely coaxial they will bind in their bearings. It is very difficult to get them lined up but if you can get them so that their axes are absolutely coincident then they will line up and there will be no difficulty arising—wouldn't be any binding in the bearings.

Q. What about other coaxial developments?

A. Well, the hands of a watch show a coaxial relationship. The minute hand is mounted on a shaft and the hour [87] hand is mounted on a hollow shaft or tube and they are made coaxial so that they can both use the same dial. To enable them both to use the same dial they are arranged with coincident axes and turn around and both use the same dial.

Q. Now, when there are two shafts to be coupled together is there any utility in a coaxial arrangement?

A. Yes, if they are not—if the axes are not in line—that is the meaning of coaxial, having coincidental axes—if they are not absolutely in line they will bind in their bearings.

Q. Here is Defendant's Exhibit J for identification. Will you point out to the court this last use of coaxiality?

A. Well, I can point out to the court the diffi-

(Testimony of LeRoy J. Leishman.)

culty that he might have overcome had he been able to arrange these shafts coaxially. As was pointed out in the patent, the condenser shaft was represented by No. 1 and the shaft in the tuner is shaft 9, I believe it was. It has to be coupled to the condenser shaft, and if they were coupled originally by a rigid coupling then the bearings of the shaft 9, in the tuner, would have to be lined up in perfect alignment with the bearings of the condenser so that they wouldn't bind in their bearings.

Now, because that is a difficult thing to do—of course that is the use of the coaxiality, and when you line them up, which is a common purpose for coaxiality, they [88] turn all right. On this device, however, a flexible coupling was used to take care of any mis-alignment. Flexible couplings that are on the model Exhibit I were also shown in the patent drawings.

Q. In what way does your use of coaxiality differ as described in your patent in suit?

A. My use of coaxiality was to prevent absolutely all rotation during the time you are trying to set the tappet. It is just exactly the opposite from these other uses of coaxiality. When you are trying to arrange two shafts so that their axes are coincident, it is so they will turn together and not bind, and my use of coaxiality was the exact opposite. It was to prevent absolutely all rotation of the rocker and tappet when you pressed the tappet firmly into engagement with the rocker so that the tappet takes the position, the same angular position of the rocker.

(Testimony of LeRoy J. Leishman.)

Q. Aside from this Schaefer tuner that you have before you, were any other automatic radio tuners on the market before yours went on the market?

A. Yes.

Mr. Lyon: I object, if your Honor please. There is no evidence that the device built in accordance with the patent in suit ever went on the market. And I think the evidence is to the contrary in all this litigation. [89]

Mr. Flam: I will reframe the question and ask whether there are any other tuners that came out after this Zenith-Schaefer tuner came out and before your patent was issued?

The Witness: Either shortly after the Zenith tuner appeared or about the same time there were some motor-driven tuners on the market of the same general class as that shown in the Jacke patent. They didn't operate in the same way but the motor turned the condenser and the dials in response to the pressing of buttons by the operator of the set.

Q. (By Mr. Flam): Now, how long did they stay on the market?

A. They were on the market only about two years too. They were in the market about the same length of time that this Zenith tuner, Exhibit I, was on the market.

Q. Did you state about when the Zenith tuner was on the market?

A. I think about 1927 and 1928 or '28 and '29. It was in the period between '27 and '29.

By the way, I have been referring to this as De-

(Testimony of LeRoy J. Leishman.)

fendant's Exhibit I. I am not sure whether that is Exhibit J or Exhibit I.

Mr. Lyon: It is Exhibit I.

The Clerk: I is the incomplete device.

The Witness: All right. This is I that I meant in the last instance. That is the one that has—I think in [90] answer to the last question I should have said J. That was the complete tuner.

The Clerk: H is the complete tuner.

The Witness: I is the one that has the single lever and that has the universal coupling.

Mr. Lyon: As I understand it, your Honor, H and I are the same thing except a lot of the duplicate parts have been taken out of I so that you can see one unit better in Exhibit I.

The Court: That is the way I understood it.

The Witness: That is right. [91]

* * *

Q. (By Mr. Flam): When did tuners using the coaxial tuner and tappet construction first come on the market?

A. They came on the market in either the latter part of January or the first part of February, but the first announcement of them that I know of was in the January 26th number of Radio Retailing, which is in evidence here as one of the exhibits with the motion that I filed before Judge Yankwich for summary judgment.

The Court: Will you read the answer, Mr. Reporter?

(Answer read.)

(Testimony of LeRoy J. Leishman.)

The Court: In what year was that?

The Witness: January 26th, 1938. That is Radio Retailing. I have the name of that wrong. I think it is Radio Weeekly. Is it not "Radio Weekly"? I am sorry. There is another magazine.

Q. (By Mr. Flam): Is this the issue you have in mind?

A. That is the issue, yes.

Q. I would like to have you point out to the court where that advertisement appeared in that issue.

A. It wasn't an advertisement. It was an announcement of Crosley's development of a new type of push button [92] radio. The article begins on page 1 and is continued on page 10, where a picture of the complete set is shown. Of course this doesn't show the internal mechanism but the set was a very common article of merchandise later. We had some of them as exhibits in the Associated case.

Mr. Lyon: Your Honor understands "Crosley" is the name of the manufacturer and "Associated" was a store here in Los Angeles that was selling Crosley sets?

The Court: I didn't know that, but I do know of the Crosley Company.

Mr. Flam: I think the Associated was a distributor and not a store.

Mr. Lyon: Well, it was a concern here in Los Angeles selling Crosley sets.

Mr. Flam: Yes, they were in the nature of dis-

(Testimony of LeRoy J. Leishman.)

tributors rather than a store. I offer that page of the Radio Weekly in evidence.

The Witness: Two pages.

Mr. Flam: I don't know the number of the pages.

The Witness: 1 and 10.

Mr. Lyon: I don't think I have any objection, your Honor, except I would like to clear up one point. Does counsel contend that that publication mentions this feature of coaxiality?

Mr. Flam: Well, the publication will speak for itself. [93] It is in evidence.

Mr. Lyon: There was something in the question about coaxiality, and I don't know whether the answer is to be taken that that publication mentions coaxiality or describes coaxiality. I don't think it does.

The Witness: Was I supposed to clarify that answer?

Q. (By Mr. Flam): Did you know that this article referred to a construction of that kind—coaxial tappets and rockers?

A. As soon as it came on the market I went down to the local jobber for Crosley Corporation, the Associated Wholesale Electric, and asked to see one of the sets and they said that that was a little premature; they thought there was only one of them built but they would have some maybe in a week or two, and so I went down in a week or two to see what it was like. Of course I had no

(Testimony of LeRoy J. Leishman.)

idea what the internal mechanism of that device was.

I was very much interested in knowing because I had had some dealings with the Crosley Corporation and then later I saw on a subsequent visit, about two weeks after this magazine appeared on the market or maybe even less, one of those tuners in one of those radio sets, and I examined it and found that it contained the coaxial rockers and tappets of the same type that were considered in the Associated case and which the court said were equivalent of [94] my rockers and tappets.

Mr. Lyon: I object to the last statement as to what the court said. I would like to stipulate that the device referred to in the publication before your Honor was the device that was passed on by the Circuit Court of Appeals in the Associated case and reported in 137 Federal. Will you so stipulate, Mr. Flam?

Mr. Flam: Will you read the stipulation?

(Stipulation read.)

Mr. Flam: That is true. So stipulated.

The Court: The objection is overruled. I am not indicating whether there is a sufficient description of a coaxial feature or not. I have read the article and know what it says. It will be marked as an exhibit.

The Clerk: Defendant's Exhibit R in evidence.

(Testimony of LeRoy J. Leishman.)

(The document referred to was marked Defendant's Exhibit R, and was received in evidence.)

Q. (By Mr. Flam): Now, aside from these tuners that you mention that were on the market before the Crosley device came out, were there any others, any other types of tuners?

A. Well, about 1936 the motor-driven tuners re-appeared on the market. I don't know that they were exactly the same construction as those that appeared some seven or nine years earlier, but they were motor-driven tuners that [95] were introduced on the market about 1936. They were for sale in 1936. And also about that same time the so-called telephone-dial type tuners appeared on the market.

Q. Can you find any patents in this book of patents that we have had to illustrate the telephone-dial type of tuner? I want to call your attention to No. 17, I think, or No. 16.

A. Yes. No. 16 shows a patent issued to Fitzgerald and it shows a dial resembling in a general way, the dial on a telephone, and the patent to Underwood is of a similar construction, but instead of putting your finger in little recesses or holes as you do on the Fitzgerald device, it is provided with a lever that you would turn in the same manner that you would turn your finger in operating the Fitzgerald mechanism. [96]

(Testimony of LeRoy J. Leishman.)

The Court: The Underwood patent is No. 17, isn't it?

The Witness: Yes, that is right, your Honor. Underwood is 17.

Q. (By Mr. Flam): Did any of these devices that you designate as telephone dial type come into commercial use?

A. Yes; they became quite common in 19—well, they were first introduced and used in a limited way in 1936 and they became very common in 1937. Most manufacturers used them in their lines.

Q. Now, what made it possible for them to—do you know what made it possible for them to become so popular in the later years?

A. Well, in and of themselves they weren't accurate at all. They were not commercially usable but they appeared in 1936, both the motor driven tuners and the telephone dial type tuners because about 1936 an electrical circuit was developed, called automatic frequency control, which compensated electrically for the mechanical inaccuracy in these tuners. Fitzgerald's mechanism was very inaccurate and the motor driven tuners were not of sufficient accuracy—didn't provide the selectivity required, but if you got into the approximate position, if you turned the dial by means of the automatic tuner to just approximately the right position the automatic frequency control would electrically [97] pull the circuits into tune and that made it possible to use tuners that were other-

(Testimony of LeRoy J. Leishman.)

wise inaccurate and which hadn't been commercially usable before.

Q. Were they entirely satisfactory? I mean the telephone dial type with the automatic frequency control circuit?

A. Well, with the mere addition of the automatic frequency control circuit they were not entirely satisfactory. In fact no matter what they did with them they were not entirely satisfactory. There was one difficulty they had that would seem to be inherent in the automatic frequency control circuit itself. It is very easy to explain.

Suppose that you were trying to tune in a station that was quite close to KFI but you happened to get the dial mechanically closer to the station that you wanted to tune in than to the position at which KFI should come in on the dial, but we will say you are fairly close to KFI and it had a stronger signal and it would drown out the other one and then the automatic frequency control would pick up the stronger signal and tune in KFI.

Because of that the automatic frequency control circuit would frequently bring in the wrong station rather than the one you wanted—it would favor the strong signal rather than the station you were more closely approaching [98] so far as the angular position of the dial was concerned.

Then there was another feature of the telephone dial type of tuner that most of the manufacturers tried to eliminate. In fact they did eliminate it by

(Testimony of LeRoy J. Leishman.)

circuit arrangements. When you tune one of these telephone dial type tuners or when you tune one of the motor driven tuners the dial turns relatively slowly and as you pass by various stations each station gives out a blurt, blurt, blurt until you get around to it. I don't know whether the reporter got all the blurts or not—until you get around to the station that you want and some of them were very blatant and it was very annoying to have these stations do that.

So muting devices were arranged so as soon as you put your finger on one of the buttons or holes preparatory to rotating the dial the set would immediately be turned off and wouldn't come back on again until you removed your finger. So, muting circuits were added to the sets to take care of that feature and the automatic frequency control circuit compensated electrically for the mechanical inaccuracy, but they never did find a way that I know of, to solve the matter of keeping the automatic frequency control circuit from at times bringing in the wrong station.

Q. (By Mr. Flam): What company do you remember marketed the telephone dial tuner in 1936 and 1937?

A. In 1936 there were only two or three concerns that [99] came out with them. The first, I believe, was Philco. We have their announcement here as one of the exhibits, and Grigsby-Grunow also introduced one in 1936.

(Testimony of LeRoy J. Leishman.)

Q. Is this the announcement you have in mind about the Philco telephone dial type of tuner?

A. That is a photograph of the folder, folded in such a way that it shows all the pages of the original folder. I picked one up at the American Radio Company then located between Broadway and Hill on 8th Street. Their stamp is on the back of this folder and it shows in the photograph.

The Court: May I see it?

Mr. Flam: I offer the Fitzgerald patent re-issue 20357, the Underwood patent 1834272 and this Philco circular in evidence.

The Court: It may be received.

The Clerk: The Fitzgerald patent will be Defendant's Exhibit S; the Underwood patent will be Defendant's Exhibit T and the Philco advertising folder will be Defendant's Exhibit U in evidence.

(The documents referred to were marked Defendant's Exhibits S, T, and U and received in evidence.)

Mr. Lyon: Mr. Clerk, will you tell me what Exhibit R is? [100]

The Clerk: Defendant's Exhibit R is page 1 and page 10 of the Radio magazine.

Q. (By Mr. Flam): Were motor driven tuners and telephone dial tuners used in the succeeding year's models?

A. Yes, they were very common in 1937. Most manufacturers put out one or the other. The tele-

(Testimony of LeRoy J. Leishman.)

phone dial tuner being naturally the cheapest was the most popular.

Q. How about 1938?

A. No, they came out in—they were 1938 models but the 1938 models were nearly always shown at the radio show in June, the national radio show and so the 1938 models would always be announced—were announced in 1937.

Q. Do you have anything that will show how extensive the use of such tuners was in 1937?

A. There is a page in the book of exhibits in the Associated case, volume 3, that is a re-print of, I believe, page 21 of the June number for 1937 of Radio Retailing and it shows a double spread containing a picture of the dials and controls on the new sets that were coming out and there is an account there of the popularity of the type of these sets—of the sets of this type, rather.

There is a volume, Mr. Flam, in that case on the table there. [101]

* * *

The Clerk: Defendant's Exhibit V for identification.

(The document referred to was marked Defendant's Exhibit V for identification.)

Q. (By Mr. Flam): Do you want to comment on this Exhibit V, Mr. Leishman?

A. I think it speaks for itself unless his Honor wants to look at it. It shows 1938 sets of the tele-

(Testimony of LeRoy J. Leishman.)

phone dial type and the push buttons for the motor driven tuners.

The Court: I shall look at it later on when the photostat is in the record. I am familiar with the machine because I had one of the earlier Philcos at my home.

The Witness: It had automatic frequency control.

The Court: Yes.

The Witness: Magnetic tuning they called it.

Q. (By Mr. Flam): Do you have any issues of Radio Retailing for June, 1937, that shows these same devices?

A. No. That is a re-print from page 21 of the June number of Radio Retailing but the only copies of the magazine [103] that I have ever had in my possession are now on file in the Oklahoma case before the Tenth Circuit Court of Appeals as exhibits.

The Court: Was the case in Oklahoma appealed?

The Witness: Yes, it was appealed and the record has been printed and the appellant has already filed its brief and we were due to file ours next week in printed form but due to this case we have asked for an extension of 30 days to give us time to prepare it.

The Court: You had better file it. I don't think you need to worry about this case until it is filed there. I would like to see what the Circuit Court of Appeals there says about it.

(Testimony of LeRoy J. Leishman.)

Mr. Flam: That is quite impossible for us to do unless you continue this trial.

The Court: I am not going to continue it now. I think it might have been continued but it wasn't. However, I am not going to decide this case until you have sufficient time to prosecute your appeal or the other side does.

Mr. Flam: I think Judge Yankwich was very adverse to any continuance.

The Court: He was but he isn't trying the case now. I am controlling the case now.

Mr. Flam: It isn't too late. I would like to ask for a continuance now. [104]

The Court: Now, I am not going to continue it at all but I am not going to decide it either until you have an opportunity to have the Tenth Circuit Court of Appeals pass on it.

You have a decision from the Ninth Circuit—you have two decisions from the Ninth Circuit and I want to know what the Tenth Circuit says about it.

Q. (By Mr. Flam): Do these sets shown in this circular have automatic frequency control circuits?

A. All of the telephone dial type tuners that made any claims to accuracy used the automatic frequency control circuits because they couldn't be used in populous areas at all and have the selectivity we talked about this morning, unless they were equipped with automatic frequency control.

(Testimony of LeRoy J. Leishman.)

Q. I show you this book entitled "Automatic Frequency Control Systems" by John F. Rider, including the jacket. What has that got to do with the automatic frequency circuit controls that you have been talking about?

A. The jacket or book? You mentioned the jacket and the book.

Q. The jacket and the book.

A. Why, the jacket——

Q. What was the book for? Did it have anything to do with these automatic frequency controls that you are talking about? [105]

A. Yes. This book was put out to acquaint service men in the radio industry throughout the country, with the automatic frequency control systems so that they could repair these sets and so that they would understand them. That was the purpose of the book.

Q. What are those pictures on the jacket? Can you identify them?

A. The pictures on the jacket are of more telephone dial tuners and the dials of some motor driven tuners that were common at the time the book was published. This book, of course, speaks for itself but it shows that it was originally printed in October of 1937. It was copyrighted in 1937 by John F. Rider.

Q. I would like to have you identify those features which are particularly pertinent in connection with this—with the importance of utilizing automatic frequency control circuit with the telephone

(Testimony of LeRoy J. Leishman.)

dial type of radio tuning. I don't want you to read it. I just want you to note the pages so that the court may read them afterwards.

A. Well, in the foreword there is page 7 and page 8 designated by Roman numerals—small Roman numerals and then in the introduction pages 1, 4 and 5 in the text of the book and page 63; pages 87 to 92. Pages 100, 102, 127, 128, 129, 131 and 141.

Mr. Flam: I offer those pages of the book referred [106] to by the witness in evidence and the cover.

The Court: They will be received as Defendant's Exhibit W and Exhibit W-1.

(The documents referred to were marked Defendant's Exhibits W and W-1 and received in evidence.)

Mr. Lyon: May we borrow that book for this evening?

Mr. Flam: Oh, yes. It is in evidence. I will stipulate that you may have it.

The Witness: Is the jacket going to have the same reference number. I should think it would be well to have an independent number.

The Clerk: They have been numbered Defendant's Exhibit W and Exhibit W-1 in evidence.

* * *

Q. I think yesterday, Mr. Leishman, you testified about certain advertisements and circular show-

(Testimony of LeRoy J. Leishman.)

ing the kind of automatic tuners that were in general use on the market in 1936 and 1937.

Did you do anything that made you acquainted still further with what was happening in this particular industry in 1937?

A. Yes. I made a trip from Los Angeles to Chicago and points east of there to call on radio manufacturers to interest them in another tuner of mine.

Q. Just exactly when was that, do you remember?

A. I left Los Angeles in July and I returned late in [110] September.

* * *

Q. (By Mr. Flam): Can you tell us what happened in connection with your trip that would throw light on what the radio industry was doing?

A. I called on a rather large number of manufacturers of radio sets and two manufacturers of radio parts who were then manufacturing a telephone dial type of tuner. And of course I had discussions at the plants with the engineers, sales managers and in some cases the heads of the companies.

Q. Can you explain what reaction—I will withdraw that. Did you try to interest them in any type of tuner?

A. I tried to interest them in a tuner that I was ready to commercialize before the original patent issued [111] on the type of tuner here in suit. The patent on this particular tuner that is now in litiga-

(Testimony of LeRoy J. Leishman.)

tion had not yet issued and without any patent protection on it whatever I was not personally disclosing the construction of that device, but I had another tuner, one feature of which was covered by a single claim in my first patent issued in June of 1937. It was that tuner in which I was trying to interest the radio industry at that time.

Q. Now, do you know whether——

Mr. Lyon: If your Honor please, I don't want to interfere but I think we shouldn't take the witness's statement that he disclosed a tuner covered by a claim of another patent. I am satisfied, to save time, if he will identify the claim and the tuner because I don't know whether the tuner is covered by that claim. That requires a legal conclusion.

Mr. Flam: I wasn't trying that patent at all. It was merely a matter of identifying or explaining what this witness did in the summer of 1937. I don't think it is necessary to interpret the patent.

The Witness: Perhaps if I rephrase my answer it would satisfy Mr. Lyon.

Q. (By Mr. Flam): Go ahead.

A. I, of course, was the owner of the patent that issued in 1937 and in my opinion I had some protection by [112] virtue of one claim in that patent so I was reasonably safe in showing the tuner that I was displaying in 1937.

Mr. Lyon: If your Honor please, may we have that patent and claim identified and something to show what the structure was that he actually dis-

(Testimony of LeRoy J. Leishman.)

closed—whether it was a model or a drawing so your Honor can see whether his conclusion is correct or not.

The Court: Read the answer, Mr. Reporter.

(Answer read.)

The Court: What claim is it you refer to?

The Witness: I don't remember the claim now but I could identify it if I went over all the claims in that particular patent. I haven't had any occasion for over 10 years to refer to that claim but it was my patent number 851 and I gave that—that was the first patent that issued on the application that I filed in 1934 from which the application on the patent here in suit was divided.

Mr. Flam: I think I can find it in this book.

The Witness: It isn't in there, Mr. Flam. I have some copies here of the patent in court and I could look it up during the recess or at noontime and I think it would be better if I did it at noon so I could definitely identify the claim. However, I think it may develop that it has no particular materiality.

Mr. Lyon: I think the file wrapper of 851 patent is in [113] evidence as Exhibit O. Perhaps that file wrapper contains a copy of the patent that you are talking about.

The Witness: I think it does and I am quite sure I have copies of the patent here in my papers on the table.

Mr. Flam: Here is a printed copy of that patent,

(Testimony of LeRoy J. Leishman.)

Mr. Leishman, in Exhibit O. Maybe you can clear up the matter now and if you can please do so.

A. You mean you want me to try and find that claim now?

Mr. Lyon: I am not in a hurry about the claim if we can know what the structure was that was disclosed by Mr. Leishman on the occasions stated. I wanted it to appear clear to the court that he didn't disclose the structure of the patent in suit or any structure that had his feature of coaxiality in it.

The Witness: I am willing to agree to that. I didn't want them to have any information pertaining to it whatever and that I very carefully refrained from any such disclosure and that the feature of coaxiality is not shown in issued patent 2,084,851.

The Court: That was the purport of his answer before, I thought, when he stated that the patent application was pending and he didn't feel as though he should disclose anything to the manufacturers.

Mr. Lyon: That is satisfactory to me. I just wanted it [114] to be known so there was no question about it, your Honor.

Q. (By Mr. Flam): As a matter of fact, Mr. Leishman, that model—first of all did you exhibit any model or device to them in connection with this thing that you were trying to license them on?

A. Yes, I did.

Q. Can you explain just about what that model

(Testimony of LeRoy J. Leishman.)

looked like? And I call your attention to this exhibit here that was filed in connection with your summary judgment.

The Court: What is that?

Mr. Flam: I had better have it marked for identification.

The Witness: This was an exhibit——

Mr. Flam: Just a minute. Let the clerk mark it, Mr. Leishman.

The Court: This is a new one. This is the first time it has been presented.

The Witness: Yes. It was filed with the motion for summary judgment.

The Court: Let it be marked for identification.

The Clerk: This is Defendant's Exhibit X for identification.

(The document referred to was marked Defendant's Exhibit X for identification.)

Mr. Lyon: As I understand it this is not the model [115] that was actually shown by the witness on the occasion stated.

Mr. Flam: That is the understanding.

Mr. Lyon: Is this supposed to be a model of 851, Exhibit O?

The Witness: No, it is not. In fact, there was only one feature of the model that I displayed to the radio industry in the summer of 1937 that is in any way covered by any claim of patent No. 2,084,851, and the internal mechanism, the automatic tuning mechanism is very different to that shown in

(Testimony of LeRoy J. Leishman.)

2,085,851 patent. So, the tuner, that I disclosed to the radio industry in the summer of 1937 had only one feature in common with the structure shown in this 851 patent, if we may abbreviate the number that way. And that was the means of having access to the set screw from the outside of the set.

Q. (By Mr. Flam): Set screw for what?

A. The set screw for adjusting the tuner so that it could bring in particularly desired stations.

Q. (By Mr. Flam): Now, that model you have in your hand now, Exhibit X for identification, did it have anything in common with the model you had with you in the summer of 1937?

A. Yes, it does. This operates on the same principle and is the same type of tuner and in my estimation, which I [116] don't think has any legal bearing for this purpose, was covered by the patent that subsequently issued on the tuner that I was then showing to the radio industry.

This particular tuner was manufactured by Gilfillan Brothers in Los Angeles under the patent that issued on the tuner that I was showing in 1937.

Mr. Lyon: Can we identify that patent, your Honor?

The Court: Yes.

Mr. Lyon: I think we shouldn't have a conclusion of the witness that something "is covered by a patent."

The Court: What patent are you referring to as

(Testimony of LeRoy J. Leishman.)

being the one under which Gilfillan was manufacturing?

The Witness: That patent ended with the number 343, but I don't think there is any feature of that that is pertinent here because we are not claiming that that patent is infringed by any of these litigants; and whether or not the claims do cover this tuner seems to me are immaterial.

Mr. Lyon: If your Honor please, I would like to shorten my objection and have a copy of that patent identified and made of record because otherwise we just have the witness' statement that he showed a device which was covered by a patent which is not here, and which we don't have the full disclosure of.

Mr. Flam: It wouldn't be pertinent. If it is pertinent we would be glad to produce it. I think Mr. Leishman can identify the patent if given a little time.

The Witness: I can furnish plenty of copies to him. I have copies of most of my issued patents at home and I know I have several copies of that. But the only point that I had in mentioning that was that the principle of operation of this tuner is the same as the principle of operation of the tuner that I disclosed in 1937 and operates in the same manner. That was why I referred to that patent.

Mr. Lyon: I have a copy of the 343 patent here and we can settle my objection if the witness will identify it and it will be put in the record.

(Testimony of LeRoy J. Leishman.)

The Witness: I think it will be very helpful if we have that because we can clear up several of these matters with it.

The Court: May I see the model for a moment?

The Witness: This has little levers and you press down on the buttons to operate it. It may be that your hand is holding part of the mechanism against turning. There is a dial on the front that has to move up and down—a pointer. You are probably not pushing it hard enough.

Q. (By Mr. Flam): Mr. Leishman, I hand you a copy of patent No. 2,163,343. Is that the patent that you were talking about as being of pertinence in connection with this Exhibit X?

A. Yes. And also pertinent in connection with the [118] tuner that I was showing to the industry in 1937.

This patent was applied for in July, 1937, while I was away on this trip—away from Los Angeles, and it shows the structure of the tuner that I was then showing to the industry. And we can readily show the feature that this tuner has in common with the tuner shown in 851 patent if we will refer to Figure 1 in the 343 patent and figure 1 in the 851 patent.

It will be noticed that on the front panel, G, through which the type of the lever, F, protrudes in each case; that below the lever there is a member, O—member, M, which holds a little index tab, O. That index tab covers up a hole, U, in the front

(Testimony of LeRoy J. Leishman.)

of the panel of the set and when the index tab is removed it is possible to put a screwdriver through the aperture, N, in the member M and through the hole, U, so that it can be inserted in the head of the screw, R, in member A shown in dotted lines in the tuned in position.

Whenever the lever is pressed down in this 851 device it brings the screw in a position with this hole, U, and the screw is therefore accessible through that hole.

In the 343 patent that feature is shown and it was a claim on that feature alone which I felt justified in my disclosing the structure of the 343 patent to the radio industry because I figured, whether it was right or wrong, [119] that I had some measure of protection and I personally felt justified in disclosing that structure. [120]

* * *

The Court: Counsel wanted the production of the patent under which it was asserted that a model exhibited in 1937 was formulated or made up and now he has produced a patent here. [123]

Mr. Flam: If you wish you may introduce that patent in evidence on the testimony of the witness. I have no objection to it.

Mr. Lyon: The witness has identified the patent and has it in his hand and I will ask that it be received in evidence, your Honor.

Mr. Flam: I have no objection.

(Testimony of LeRoy J. Leishman.)

Mr. Lyon: I don't know whether it should be my exhibit or Mr. Flam's exhibit.

Mr. Flam: You asked for it. It doesn't make any difference. We will mark it as a defendant's exhibit and offer it in evidence for the defendant.

Mr. Lyon: Exhibit Y.

The Clerk: Exhibit Y, yes.

Mr. Lyon: And the number of the patent so it will appear in the record at this time is 2,163,343.

The Court: It will be received.

(The document referred to was marked Defendant's Exhibit Y, and was received in evidence.) [124]

* * *

Mr. Flam: Now, in what way did that model you exhibited to the industry in 1937 differ, if any, from this model, [125] Exhibit X?

A. In the first place, the levers in the tuner that I exhibited to the radio industry were pivoted in a different place. Levers can be pivoted at any place and these levers on the tuner Exhibit X, are pivoted between the operating end and the end that engages the angularly adjustable member on the inside. When you press down on the lever on the outside the opposite end of the lever engages the adjustable member.

Q. Was that model there smaller or larger?

A. It was larger in bulk than this. And instead of—I have explained how the adjustment was made on the tuner that I showed to the radio industry.

(Testimony of LeRoy J. Leishman.)

On this there is a different arrangement. One single screw is accessible from the back of the set and is used for setting all of the positions and members, angularly positionable members in their proper position, but the method of operation, the relative shape of the cams or positionable members, rather, and the idea of engaging the positionable members on one side of the axis and rotating it until a portion on the opposite side of the axis engages the manually operable member was the same.

Q. Now, to whom did you first talk to on this eastern trip?

A. I first went to the Crowe Name Plate & Manufacturing [126] Company.

Q. And where were they?

A. In Chicago, Illinois.

Q. The firm name is Crowe Manufacturing Company?

A. The firm name of that company has now been changed to Crowe Name, Incorporated. That was the first firm that I visited. They were manufacturing automatic tuners for the industry and were the leading manufacturers at that time of telephone-dial type tuners. [127]

* * *

Q. (By Mr. Flam): Who, in the Crown Name Plate Company, discussed the tuner situation with you at that time?

A. The first person that I talked to was Marvin Lane, the sales manager. I later talked to Mr. H. Z.

(Testimony of LeRoy J. Leishman.)

Benton, the chief engineer, and another engineer there by the name of Johnson. At other times I talked to Winslow Goodwin, who was the head of the radio section of the Crowe Name Plate Company. And I talked to the comptroller of the company, Mr. Cagey, and to the president of the company.

Q. What was his name?

A. Mr. E. C. Coolidge.

Q. And these discussions took place where?

A. They took place at the plant of the Crowe Name Plate and Manufacturing Company at 3701 Ravenswood Avenue, Chicago.

Q. And about what time—what date as closely as you can remember?

A. There were various discussions. The first one was early in July because I left here right after the 4th of July—I think I left here about the 5th in 1937, and the first place that I called when I went to Chicago was the Crowe Name Plate and Manufacturing Company. [128]

* * *

Q. (By Mr. Flam): As far as you can recollect of your conversations with each one of these persons you have named, what were your conversations?

A. My first conversation was with Mr. Marvin Lane and my object in talking to him——

Mr. Lyon: I object to that.

Q. (By Mr. Flam): Don't say what your object was. Relate the conversations as nearly as you recollect.

(Testimony of LeRoy J. Leishman.)

A. My conversation with him dealt primarily with the tuner that I was showing them—that I was trying to get them to manufacture. And Mr. Lane stated that he thought it was a very fine tuner and much superior to the tuners that the radio industry was using. And he wanted me to show it to Mr. Johnson.

I did show it to Mr. Johnson. Mr. Johnson expressed the same opinions that were expressed by Mr. Lane. And Mr. Lane said that, unfortunately, the head of the radio department, Mr. Goodwin, was then in Europe and that they [130] weren't in a position to take a license from me until he returned.

I had already told Mr. Lane that I would not give them an exclusive license; the best kind of license I would give them would be an exclusive license to manufacture them for resale to other radio manufacturers, but that I wanted to reserve the right for myself to license radio manufacturers who manufactured their own tuners. So, Mr. Lane said that since I was going to call on other radio manufacturers anyway, that I had perhaps better go on my tour and call on these various manufacturers and that they would check on the reactions—that is the Crowe Name Plate & Manufacturing Company would check on the reactions from the industry and that by the time I returned to Chicago Mr. Goodwin, the head of the Radio Department, would have returned from Europe and I could talk to him then

(Testimony of LeRoy J. Leishman.)

and they would be in a much better position to talk to me because they would have the reactions of the industry.

Shall I tell now what happened when he came back, or do you want this in chronological order?

Q. Go ahead and make as clear a chronological statement of the conversations as you can.

A. Well, the other conversations at the Crowe Name Plate and Manufacturing Company took place after I had called on various other radio manufacturers. [131]

Q. Well, you may go into that now.

A. The conversations with other radio manufacturers?

Q. No, with Crowe Name Plate.

A. Well, the other conversations at the Crowe Name Plate Company took place after I had returned from calling on most of the principal radio manufacturers in the United States.

Q. When was that?

A. Between the early part of July and September 17th, 1937.

Q. I mean when did these later conversations take place with the Crowe Manufacturing Company?

A. After I had returned to Chicago.

Q. When was that?

A. From calling on various manufacturers in Chicago, Indiana, Michigan, New York and Ohio.

Q. When did you have this conversation with the Crowe Name Plate people after you contacted these other manufacturers?

(Testimony of LeRoy J. Leishman.)

A. It would have been between Labor Day, 1937, and September 17, 1937.

Q. And were they at the same place at the plant of the Crowe Name Plate Company?

A. That is right.

Q. And who were present at those conversations?

A. At the first conversation Mr. Lane was present and he introduced me to Mr. Goodwin and Mr. Lane told me that they had checked through their representatives and found that my tuner had made a great impression and that they were interested in discussing a license with me.

I might say that in the earlier conversations Mr. Lane told me that he thought he could expedite my visits to these various manufacturers by telling me the relative importance of the various manufacturers and in some cases they made private brand sets and he told me who they manufactured for and what parties it would be best to see at the different plants. And, of course, I had done that and when I returned to Chicago Mr. Lane introduced me to Mr. Goodwin. [133]

* * *

Q. (By Mr. Flam): You mentioned, Mr. Leishman, that the Crowe Name Plate Company seemed to be interested in obtaining a license. [134]

A. Yes, they were. And they signed a license with me on September 17, 1937, and I filed photographic copies of it here in the court in connection with my motion for summary judgment. That

(Testimony of LeRoy J. Leishman.)

license speaks for itself, I guess, excepting in one respect, if I may——

* * *

Mr. Flam: Your Honor, the original of this license agreement has been introduced in evidence in the Oklahoma City court and the best we could do is to have a photostat of it here. If Mr. Lyon has no objection we will use that.

Mr. Lyon: I have no objection on the ground it is a photostat but it seems to be incomplete because it refers to the "device illustrated in the accompanying photograph of the patent drawing" and I don't know what those drawings are and they seem to be a very material part of this license. Can you supply those? If you can I am perfectly willing to accept the photostatic copy.

Mr. Flam: In order to cut this short and get along, [135] the blueprints of the patent application drawings were attached.

Mr. Lyon: What patent?

Mr. Flam: I am trying to identify it for you. I think I can ask Mr. Leishman.

Q. Do you know what that patent application drawing was that was attached to Exhibit Y?

A. Yes; the drawing mentioned in the license of September 17, 1937, to Crowe, incorporated as a part of it the drawings of the 343 patent. The two sheets of drawings were attached to that license agreement and made a part of it.

Mr. Lyon: With that understanding I have no

(Testimony of LeRoy J. Leishman.)

objection to this photostatic copy, your Honor.

The Court: It may be marked as an exhibit.

Mr. Flam: Will you mark this?

The Clerk: In evidence?

The Court: Yes, it is already in the record on the motion for summary judgment but I presume it had better be marked in this record.

The Clerk: Defendant's Exhibit Z in evidence.

The Court: My understanding is, gentlemen, under the new rules that where instruments are received by the court on motions for summary judgment, they become a part of the record in the case. Do you gentlemen understand differently?

Mr. Flam: I think your Honor is right. We are introducing [136] them to get a coherent——

Mr. Lyon: My understanding is they are of record in the case but I don't believe that they are evidence at the trial unless they are offered and received in evidence, because this was a motion brought by Mr. Leishman, this summary judgment motion, and it was denied and there was no procedure which would determine whether each and all of the documents and things that he exhibited in connection with his motion were proper evidence.

The Court: Well, there may be some doubt about it. I presume it is better to re-offer them here. You may proceed.

Q. (By Mr. Flam): You stated that after your first series of conversations with Crowe Name Plate Manufacturing Company you visited the plants of

(Testimony of LeRoy J. Leishman.)

other radio manufacturing companies, is that right?

A. That is correct.

Q. Can you name which ones you visited?

A. I have made a list of them, if I may refer to that list I can give you the names much quicker.

Q. Go ahead.

A. Belmont Radio Corporation of Chicago. Galvin Manufacturing Company of Chicago, manufacturers of Motorola receivers. The Stewart-Warner Company.

Then I called at Montgomery Ward. They were not radio manufacturers. [137]

Q. Was that in Chicago?

A. Yes, Montgomery Ward of Chicago. They were not radio manufacturers but they sold a private brand line of radio sets manufactured for them by Wells-Gardner Company and Belmont Radio Corporation. The Erla Manufacturing Company, the manufacturers of the Admiral radio. I am not certain of their corporate name. The General Electric Company, Westinghouse Electric & Manufacturing Company. Their headquarters were in New York. General Electric was in Schenectady.

The previous firms that I mentioned were all in Chicago. Noblett Sparks of Columbus, Indiana, manufacturers of Arvin radios. The Clinton Manufacturing Company of Chicago. Fairbanks-Morse of Indianapolis, Indiana, the manufacturers of the Fada radio in New York and then I called on the Andrea concern. I don't remember whether it is Andrew Company or Andrew Manufacturing Com-

(Testimony of LeRoy J. Leishman.)

pany, a corporation. The Emerson Radio Corporation. The American Bosch Magneto Corporation and the Crosley Corporation.

Q. Now, where was the Crosley Corporation's place of business that you visited?

A. May I add one thing to the answer to your last question?

Q. All right.

A. If it is not pertinent just tell me. I tried to [138] call on—I tried to see the people at the Delco division of the plaintiff. I don't want them to feel slighted that I didn't think they were important manufacturers. I went to Kokomo but the party I was supposed to see wasn't there. I did show the tuner to some members of the concern but I don't think they had any official standing. Now, what was your other question?

Q. You mentioned that you visited the Crosley Company. Where was the plant that you visited?

A. The Crosley Manufacturing Company or the Crosley Corporation, rather, is located in Cincinnati, Ohio.

Q. When did you have conversation with anyone there at Crosley?

A. I first called at the Crosley plant on my way from Chicago to Washington. I visited Washington on that same trip and then later, after having been to Washington and New York and Buffalo and Detroit——

Q. Now, let us take these conversations one at

(Testimony of LeRoy J. Leishman.)

a time. When was the first time that you had a conversation?

A. Well, the first visit was——

Q. Do you have anything that might refresh your memory as to what it was?

A. Well, I can probably find my hotel bills——

Mr. Lyon: There isn't any——

The Witness: It would be—— [139]

Mr. Lyon: There isn't any doubt about when the date was. I mean there is no dispute about it. We can fix it from his prior testimony, I think.

The Witness: It would either be late in July or early in August.

Mr. Lyon: There is no dispute about the date, your Honor.

Q. (By Mr. Flam): And with whom did you speak or have conversations at that time?

A. My first conversation was with Mr. Fred Johnston, the chief radio engineer. And I also spoke with Mr. Kellogg who was a distributor for some of the sets of the corporation and I talked with Mr. Powell Crosley the third.

Q. That was at the first conversation?

A. That is on the first conversation.

Q. Now, can you state as accurately as you can what was stated in that conversation?

A. I, of course, demonstrated the tuner to Mr. Johnston and Mr. Johnston——

Mr. Lyon: Is that the tuner—is it the same tuner you have referred to as shown?

(Testimony of LeRoy J. Leishman.)

The Witness: The one I was demonstrating to the industry in general and shown in 343 patent.

Mr. Lyon: The same one that has been identified as the one that was shown to the Crowe Manufacturing Company. [140]

The Witness: That is right. And to keep the matter straight I want to reiterate that I did not disclose or have any intention of disclosing to the Crosley Corporation, the coaxial tappet and rocker construction that we have been discussing here.

Mr. Johnston said that it was very refreshing to see something that they could use; that many different devices came over his desk and that one year he counted them——

Q. (By Mr. Flam): By the way, what was Mr. Johnston's position? Did you state that?

A. I stated that, yes.

Q. All right, go ahead.

A. And he told me that he would like to have Mr. Crosley see the tuner but that Mr. Crosley wasn't then in Cincinnati. And he asked me if I would come back to the Crosley plant on my return trip from points east. I told him that I was, after being in New York, was going to go to Buffalo to call on the Colonial Radio Corporation. By the way, that is an additional concern that I saw. They manufacture Silvertone radios for Sears Roebuck. And then I told them that I was going to Detroit.

I called on the Detrola Company there, to make the answer complete.

(Testimony of LeRoy J. Leishman.)

Mr. Johnston told me that since I was coming back [141] through those cities it wouldn't be very much out of my way if I would return to Cincinnati, but he said that to save me a possible wild goose chase that it would be advisable if I would telegraph him when I got to Buffalo and he would try and have an answer for me at Detroit, when I got to Detroit, advising me whether Mr. Crosley would be available then.

Q. Was anything else stated in that conversation?
A. (No answer.)

Q. Was anything demonstrated to you or shown to you at the plant of the Crosley people that the Crosley people were making or thinking of making?

A. Yes. They demonstrated to me a motor-driven tuner that they were working with and considering and that they were developing. That is all that I remember.

Q. Now, what happened after that? Was there any request for you to return to Cincinnati?

A. Well, when I got to Buffalo I wired Mr. Johnston, according to the previous arrangement, and he sent me an answer. I have a photostatic copy of the telegram here that he sent me.

Mr. Lyon: I don't think that is necessary. There is no dispute about the fact that this conversation occurred and you can give the date without proving the date. We don't dispute the date. You can give the date if you have [142*] it from the telegram.

* Page numbering appearing at top of page of original Reporter's Transcript.

(Testimony of LeRoy J. Leishman.)

Q. (By Mr. Flam): You might refer to the date, Mr. Leishman, on the telegram, and we won't bother about introducing it.

A. The telegram was dated September 9th.

Q. 1937?

A. September 9, 1937, and it advised me that Mr.—I am testifying to the contents of a written document here. Do you want me to do that? It advised me that Mr. Crosley would not be in Cincinnati on the Saturday, the date that was convenient for me to be there and that Mr. Johnston had sent the telegram signed F. E. Johnston, Radio Crosley Corporation, and wanted me to advise him when it would next be possible for me to go to Cincinnati.

Q. When actually did you get back to Cincinnati, if at all?

A. I got back to Cincinnati after I had been in Chicago.

Q. When was that?

A. It would be the Wednesday following September 20th.

Q. And at that time did you have any conversations with anyone there?

A. Yes. I had a conversation with various other people at the plant and particularly with Mr. Powell Crosley, Jr., the head of the Crosley Radio Corporation. [143]

* * *

Q. (By Mr. Flam): Will you continue with

(Testimony of LeRoy J. Leishman.)

your statement regarding the conversations on the second visit?

A. Yes. I demonstrated the tuner that we have heretofore identified, that I was demonstrating to the industry, and it was shown—and as shown in 343, which was then only a patent application. I demonstrated that tuner to Mr. Powell Crosley II, the head of the firm, and Mr. Johnston was there, and Mr. Crosley stated that he would like me to leave with him a copy of my 851 patent and he would like me to send him a copy of a proposed license agreement.

I told him that I had anticipated that request and that I had a license agreement already made out and I [146] gave him that copy and a copy of the patent and he asked me who else I had licensed and I told him that I had licensed the Clinton Manufacturing Company in Chicago, and that I had also licensed the Crowe Name Plate & Manufacturing Company in Chicago. Mr. Crosley said, "Well, it may be that instead of making our own tuners we will buy them from Crowe" as the concern was generally known in the trade. And he says, "That is something we will have to decide."

"But their salesmen are over here periodically and we have your license now and a copy of this patent and we will look into these matters."

That was the only part of the conversation that I can remember with distinctness. Now, these matters might be borne in mind. I was there for many

(Testimony of LeRoy J. Leishman.)

hours at the plant and I was treated very affably by Mr. Crosley and Mr. Crosley's son, and I was very interested in licensing the Crosley Corporation because the Clinton Company that I had licensed in Chicago, who make their own, was a rather small concern and the Crosley industry was a very large one and so these negotiations were very important to me and I can remember those details that I have mentioned now very distinctly. But I can't remember other minute matters. I think probably those are the ones that are important anyway.

Q. (By Mr. Flam): Now, in the course of your travels [147] and discussions of radio tuners with the manufacturers that you mentioned before, was there anything discussed about the use of a plunger to operate the tuner? A. Yes.

* * *

The Witness: Several of the manufacturers that I visited asked me what I thought about operating the tuner that I was demonstrating by plungers instead of levers and I told them it would be entirely feasible—you could do it either way.

It was just a matter of how much pressure they were willing to put up with on the button and how much stroke it would have.

I said, "If you make your device run smoothly enough, have a dial without very much torque and easy running condensers we can, of course, fix you up to operate with a plunger."

(Testimony of LeRoy J. Leishman.)

Mr. Lyon: If your Honor please, I object to the answer as a volunteered statement as to what the manufacturers asked, because the question was, "What was the attitude of the manufacturers," and the witness is testifying as to what [153] he said which I don't think the plaintiff in this case is bound by. It was a statement out of court and was not in the presence of the defendant and also was volunteered and not called for by the question.

The Court: The motion to strike is denied. Just answer the questions, please.

* * *

Q. (By Mr. Flam): May I ask you this? I was inquiring [154] about some features of your answer to the previous question. I think you said something about making the lever such that it will operate the load placed upon it. In the first place what is the load on a tuning device?

A. The condensers and movable parts that are connected with a tuner all add to the load.

Q. Well, at that time do you know whether these tuners or articles such as condensers were easy to move or hard to move—to adjust?

A. Well, of course, that is a relative matter. They were harder to move than would be required with plungers, if that gets to your question. We discussed in order to get the matter of operating them with plungers, the dial mechanism and we discussed condensers and the possibility of getting the condenser manufacturers to make the condensers very easy to turn.

(Testimony of LeRoy J. Leishman.)

Q. Now, is there any mechanical or other advantage in using a lever instead of a plunger for operating a condenser?

A. With the lever the amount of force required by the operator depends upon the length of the stroke. The longer the stroke or the further you move the lever the easier it is to move a given load. Perhaps I am going beyond the scope of your question. That probably answers it. [155]

Q. Was it easy to move the condensers available at that time with a plunger as well as a lever?

A. No.

Q. When were the easily moving condensers made available?

A. The easily movable condensers were made available either late in 1937 or early 1938, and they were made available for these automatic tuning devices so that they would operate with little pressure on the button. That made it possible to use either a lever with a short stroke such as the tuner Exhibit X, or to use a plunger with a short movement.

Q. Now, after you returned from your trip in the summer of 1937 did you receive any communication from anyone after that?

A. You mean anyone in the industry?

Mr. Lyon: Will you read that question?

(Question read.)

A. Yes, I received communications from various people in the industry, including one from the

(Testimony of LeRoy J. Leishman.)

Crosley Corporation or from attorneys who said they were representing the Crosley Corporation.

Q. Do you have copies of those letters?

A. There is one copy of that letter already in evidence with the motion for summary judgment and I believe [156] I have another copy of that letter here somewhere, a photostatic copy. The original letter is in evidence in Oklahoma.

The letter I have reference to was from the law firm of Allan & Allan.

Mr. Lyon: The letter that has been handed to me and which the witness refers to was Plaintiff's Exhibit 36 in the case before Judge Harrison. I have no objection to it being received without further proof.

* * *

The Court: It will be marked filed as an exhibit.

The Clerk: Defendant's Exhibit AA in evidence.

(The letter referred to was marked Defendant's Exhibit AA, and was received in evidence.) [157]

* * *

Mr. Flam: The patent that was referred to in that letter from Allan & Allan is the patent of which the file wrapper is present here as Exhibit O, is that right? A. That is correct.

Q. And I understood your testimony heretofore was that that file wrapper was the file wrapper of a parent application from which was carved a

(Testimony of LeRoy J. Leishman.)

divisional application resulting in the patent of which the patent in suit is a re-issue, is that right?

A. That is correct. [158]

* * *

Q. (By Mr. Flam): Do you know whether the Crowe Name Plate and Manufacturing Company took any steps to investigate your patent 851?

A. Yes, I know they did. [161]

* * *

Q. And was there any thing said there about investigating your patent by the Crowe Name Plate Company? A. Yes, they said that they had.

Q. Who?

A. That they had investigated the patent.

Q. Who said that?

A. Mr. Lane told me and that was also confirmed by Mr. Goodwin. In fact I saw a copy of the file wrapper.

Q. You did see a copy of the file wrapper?

A. Yes.

* * *

Q. (By Mr. Flam): Did you ever hear further from the Crosley Corporation or from Allen & Allen regarding anything further on your patent 2,084,851? A. No, I never did.

Q. I think you said yesterday that the Crosley Corporation started using the coaxial tappet and rocker arrangement in January, 1938. Is that right?

(Testimony of LeRoy J. Leishman.)

A. They started using it either in January or February and I stated that the first information that I had that they were making a new tuner was contained in the January 26, 1938, number of Radio Weekly, which has been introduced here in evidence.

(Mr. Flam showing object to Mr. Lyon.)

Mr. Flam: I should like to have this apparatus marked for identification.

The Court: Is that another one?

Mr. Flam: That is a Crosley, I think. The witness will testify that is a Crosley tuner.

* * *

The Court: You had better have it marked for identification.

The Clerk: Defendant's Exhibit BB for identification.

* * *

Q. (By Mr. Flam): Mr. Leishman, is that the type of Crosley tuner [170] that you have been talking about that came out on the market some time in January or early in February of 1938?

A. It is.

Q. Was this a licensed tuner?

A. No, sir, it was not.

Q. Do you have any advertisements or other data showing the Crosley intention to market this tuner?

A. Well, in addition to the magazine containing the articles about it I have two magazines that contain advertisements for it.

(Testimony of LeRoy J. Leishman.)

Mr. Flam: I offer in evidence, your Honor, page 15 of the issue of the Automobile Trade Journal for April, 1938, which is the same page offered as Exhibit 35 in the Associated Wholesale Electric case.

Mr. Lyon: No objection.

The Court: So received and marked.

The Clerk: Will that be in evidence?

Mr. Flam: I offer it in evidence.

Mr. Lyon: You didn't offer your specimen.

Mr. Flam: I think I did.

The Clerk: That is in for identification as Exhibit BB, Crosley tuner.

The witness: It also says "in evidence BB."

Mr. Flam: I re-offer it just to make the record clear.

Mr. Lyon: No objection. [171]

The Court: So ordered.

The Clerk: Defendant's Exhibit BB now in evidence.

(The instrument referred to was marked Defendant's Exhibit BB, and was received in evidence.)

The Clerk: Is this magazine page 15 Exhibit CC in evidence, your Honor?

The Court: It has not been formally offered yet, but it is in his hand. I assume he is going to offer it.

Mr. Flam: The one the court has in his hand is already offered.

The Court: Is that CC?

The Clerk: CC.

(Testimony of LeRoy J. Leishman.)

The Court: Received in evidence as such.

The Clerk: CC in evidence.

(The document referred to was marked Defendant's Exhibit CC, and was received in evidence.)

Mr. Flam: I likewise offer in evidence the inside back cover of the magazine Radio Retailing for February, 1948, which is the same page offered as Plaintiff's Exhibit 32 in the Associated Wholesale Electric case.

Mr. Lyon: That is according to my understanding, your Honor.

The Court: No objection, Mr. Lyon?

Mr. Lyon: No objection.

The Clerk: Defendant's Exhibit DD in evidence.

(The document referred to was marked Defendant's Exhibit DD, and was received in evidence.)

Q. (By Mr. Flam): Looking at Exhibit BB in front of you, Mr. Leishman, did any other manufacturer make this specific type of tuner? Before that, will you explain to his Honor the operating parts only of that mechanism?

A. Yes. There is on the top of the instrument a variable condenser of the type that we discussed yesterday, and it is connected by means of gearing to a rocker member. The rocker member instead of having bars with one hole in it is a long bar with several holes in it, and there is a tappet associated

(Testimony of LeRoy J. Leishman.)

with each of these plungers for moving the rocker, the tappet is adjustable to pre-determined positions. Whenever you press down any one of the buttons or plungers, it moves the rocker to the position for which the tappet was adjusted. The tappet in each case when pressed into full engagement with the rocker assumes the position in which the axis of the tappet is coaxial with the axis of the rocker.

Q. Did any other manufacturer offer a tuner mechanism of that type?

A. Subsequent to the appearance of the Crosley tuner on the market the Du Jur Manufacturing Company placed one on the market. This was two or three months later. Not later than that. [173]

Q. Was there one made by the Quality Hardware Company?

A. Considerably later. In chronological order, the next one, as I remember it, that came on the market was one manufactured by the General Instrument Company. I have a picture of that here. The only tuner that I had of that type is an exhibit in the Oklahoma case.

Q. Do you know about when that General Instrument Company device was on the market?

A. The General Instrument Company device came on the market in the spring of 1938. I don't believe you have the right drawing, Mr. Flam.

Q. I show you what was filed as Exhibit W.

A. That is a later tuner. This is the one I have in mind for the General Instrument Corporation (indicating).

(Testimony of LeRoy J. Leishman.)

Q. Do I understand it that the drawing you have in your hand now represents the General Instrument Corporation mechanism? A. That is correct.

Mr. Flam: Your Honor, I think the witness already stated that the original tuner, the actual model, is in the custody of the courts in Oklahoma. With that as a foundation, I should like to offer this drawing in evidence.

Mr. Lyon: I have no objection, Mr. Flam. I haven't seen that particular tuner, but subject to correction, if we [174] find any need for correction, I am willing to accept it now, your Honor.

The Court: So understood and so ordered.

The Clerk: Defendant's Exhibit EE in evidence.

(The drawing referred to was marked Defendant's Exhibit EE, and was received in evidence.)

Q. (By Mr. Flam): Do you want to explain the structure shown on that exhibit just introduced, EE?

A. Yes.

The Court: Do I have the same drawing? I guess I have.

A. These sheets happen to be marked Defendant's Exhibit X. That is because they were introduced as Defendant's Exhibit X with the motion that I filed for summary judgment earlier in this case.

The Court: But we are referring now to Exhibit EE in this case, aren't we?

(Testimony of LeRoy J. Leishman.)

The Witness: I didn't know the number, but I will so mark it.

The device shown in Defendant's Exhibit EE was manufactured by the General Instrument Corporation. The original model of this that I had was an exhibit in the Associated case, and that same tuner is now an exhibit in the Oklahoma case. These drawings are made from the drawings from the file wrapper of the General Instrument Corporation tuner patent on this device. The rocker in this case, instead of [175] having a hole through it has a recess which doesn't go all the way through the rocker. The rocker is No. 4 and a cross-section of it is shown in green in the figure, and the rocker has been given a sort of bathtub shape. If you saw the entire rocker here it would be obvious that was the shape of it. When the tappet 3 is brought into full engagement with the rocker the axis of the tappet 3 at the center of the white portion on these particular drawings will go down inside of the rocker structure so that the axis of the tappet becomes coaxial with the axis of the rocker and the two have been especially shaped with respect to each other so that that coaxial condition can prevail.

Q. (By Mr. Flam): Do you have any other data of other tuners that came out about the same time?

A. The next one that I know of that came out on the market I believe was the one manufactured by Quality Hardware and Manufacturing Company of Chicago and which was later produced by them in conjunction with Crowe Name-Plate and Manufac-

(Testimony of LeRoy J. Leishman.)

turing Company of Chicago, which was the licensee under my patents.

Mr. Lyon: If your Honor please, I think the witness should fix the time when this device of the Quality Hardware and Manufacturing Company was first produced on the market.

Mr. Flam: We expect to do that.

The Witness: I think that's right. [176]

The first tuners made by the Quality Hardware and Manufacturing Company came on the market in the summer of 1938, and I am quite sure that it was in July.

The particular tuner that I have here was one that was manufactured later by the Quality Company, using the same identical structure, but containing more than the number of buttons than were on the 1937 model, and——

Mr. Flam: May I offer that in evidence so that we will have an identification? I offer this model in evidence, your Honor.

The Court: So received and marked.

The Clerk: Defendant's Exhibit FF in evidence.

(The device referred to was marked Defendant's Exhibit FF, and was received in evidence.)

Q. (By Mr. Flam): Will you go on about this Exhibit FF, Mr. Leishman?

A. In this device, Exhibit FF, there is a long rocker extending the entire length of the tuner, and

(Testimony of LeRoy J. Leishman.)

it has one aperture for each of the manually operable members, plungers in this case, and pivoted to each of the plungers there is a tappet, and the tappet and the rocker are so shaped and pivoted that when the tappet comes into engagement with the rocker they assume a coaxial position, that is, the axis of the tappet becomes coaxial with the axis of the rocker, and when the tappet is loosened and you turn the rocker to any extreme [177] angular position and press on the tappet there is no tendency whatever for the rocker to move. By tightening the button or tightening a set screw, which is a part of the button structure, the cam can be tightened in the adjusted position, and then the rockers, of course, move to the right angular position for the station for which the button was originally set. This particular tuner was one that was manufactured by Crowe Name-Plate and Manufacturing Company and Quality under my re-issue patent for the Zenith Corporation that marketed about 1937 or '38 or '39, a two-year period in there, the Schaffer tuner that we described yesterday.

Mr. Lyon: When did the witness say, 1937?

The Court: 1938 and '39.

The witness: I meant '27, '28 and '29. Shall I re-state it?

The Court: Yes.

The Witness: I stated that this tuner Exhibit FF was manufactured by Quality Hardware and Manufacturing Corporation and Crowe Name-Plate

(Testimony of LeRoy J. Leishman.)
and Manufacturing Company for the Zenith Corporation, which earlier in the years between '27 and '29 had marketed the Schaffer tuner that we described yesterday.

Q. (By Mr. Flam): You mean such as Exhibit H, for identification? [178]

A. Yes, that is correct.

Q. To clear up this matter of dates, I think you said it was what month and year that this particular thing was manufactured, Exhibit FF?

A. The first tuners of this type in which the button and tappet were made from the very same dies appeared on the market in the summer of 1937. This particular——

Q. I think you said '38 before. I want to be sure which of the two you mean.

A. '38, I mean. I am sorry. None of these tuners were on the market until 1938. No coaxial rocker and tappet tuners whatever were on the market until my teachings on this matter became available. None of them appeared on the market until 1938, and it was in July or August '38 that the first Quality tuners came on the market, and they were later produced in conjunction with Crowe under a license agreement with me, and this particular one that has been introduced as Defendant's Exhibit FF was manufactured by Crowe and Quality for the Zenith Corporation.

Mr. Lyon: I move to strike that portion of the last answer of the witness where he employed the

(Testimony of LeRoy J. Leishman.)

words, or substantially the words, "until my teachings became available," on the ground that that is volunteered, and also is a conclusion of the witness.

The Court: Motion denied. [179]

Q. (By Mr. Flam): You mentioned about licensing Crowe under your re-issue patent.

A. They were licensed originally under the original patent which was later re-issued as my re-issue patent 20,827.

Q. Do you have a copy of that license agreement?

A. There is a copy already in the record with my motion for summary judgment, a photostatic copy of the original license. The original license is an exhibit in the Oklahoma case.

The Court: I wanted to ask you a question here about these last two models, FF—and what is the other one?

The Witness: This one is FF.

The Court: And BB. Were those models or facsimiles of them introduced in the case before Judge Harrison?

The Witness: Yes. There was in the case before Judge Harrison either this exact tuner that has been marked Defendant's Exhibit BB, or one which was identical to it. And in that same case there was a four-button model of Crowe and Quality tuner corresponding to Exhibit FF with the same plunger, tappet and rocker construction. The only difference here being that there is a longer rocker and more buttons on the particular one that they made for Zenith.

(Testimony of LeRoy J. Leishman.)

Incidentally, this Exhibit FF bears the number of my re-issue patent here in suit on each of the two end plates. [180]

* * *

Mr. Flam: Your Honor, I have here a photo-static copy of a license which I think the witness will identify as the one Crowe entered into in 1938. The original, I think, is in the Oklahoma courts, and Mr. Lyon——

Mr. Lyon: I will accept the photostat.

Mr. Flam: I offer that license agreement in evidence. [181]

The Court: It will be received.

The Clerk: Defendant's Exhibit GG in evidence.

(The document referred to was marked Defendant's GG and received in evidence.)

Q. (By Mr. Flam): Mr. Leishman, I think you have already mentioned the Crosley, DuJur, General Instrument Corporation and Quality in conjunction with Crowe that made this type of tuner, tappet and rocker. Were there any other manufacturers at that period in 1938 or thereabouts that made that same type of device?

Mr. Lyon: I would like to have counsel make more definite what he means by this type of device. If he means merely a tuner of some kind or other with an adjustable tappet that is shaped with a rocker so that they were coaxial, if that is what he means by the type, I am satisfied with that under-

(Testimony of LeRoy J. Leishman.)

standing; but if he means something else, I think it should be defined.

Mr. Flam: I think I mentioned this tappet and rocker arrangement was shown in these other exhibits, that became coaxial when the tappet is in full engagement.

Q. (By Mr. Flam): Do you know of anything else?

The Court: There ought to be a little more specification there. We have had a lot of exhibits here. Some of them are, apparently,—without determining whether they are or not—quite different. I am handing you back these two models that I was asking him about. [181-A]

If that is what you refer to, the question is clear.

Q. (By Mr. Flam): Such, for example, Mr. Leishman, as shown in Exhibits EE, BB, and FF.

The Court: Now will you read the question, Mr. Reporter?

(The question referred to was read by the reporter, as follows:

“Q. Mr. Leishman, I think you have already mentioned the Crosley, DuJur, General Instrument Corporation, and Quality in conjunction with Crowe that made this type of tuner, tappet and rocker. Were there any other manufacturers at that period in 1938 or thereabouts that made that same type of device?”)

The Witness: Late in 1938 or early in 1939 the Radio Condenser Company placed on the market

(Testimony of LeRoy J. Leishman.)

a tuner which also used a rocker and adjustable tappet which became coaxial in the fully engaged position. That is, the axis of the tappet became coaxial with the axis of the rocker in the fully engaged position. In their case, however, instead of having a recess——

Q. Do you have anything to illustrate what that structure was?

A. Yes, I have a drawing here.

Q. Do you know whether there is a model that could be [182] used in place of the drawing?

A. The only model that I had was an exhibit in the Associated case, and it is now an exhibit in the Oklahoma case. However, I have drawings—I have prints of drawings that appeared in the file wrapper of the patent application of the Radio Condenser Company on this particular [183] tuner?

* * *

Q. (By Mr. Flam): Will you state how this drawing you have in your hand now compares?

A. We have as an exhibit that I introduced with my motion for summary judgment a tuner which I think Mr. Lyon will agree is the same for all practical purposes as the tuners before Judge Beaumont in the General Instrument and Radio Condenser case. That may be one of the actual models. I think the end plate tells who made it. It may have been Radio Condenser Company.

Q. Is this the one you have reference to?

A. That is the one I have reference to. Does

(Testimony of LeRoy J. Leishman.)

it tell who made that? That is not the one I am going to explain now, but I am trying to have these two together to differentiate them.

Mr. Lyon: This last device that you produced, Mr. Flam, if we can have it marked for identification now I would like to state that it is, according to my understanding, a duplicate of the radio condenser device which was passed upon by Judge Beaumont.

The Court: Mark it, Mr. Clerk, for identification.

Mr. Flam: I offer it in evidence.

Mr. Lyon: No objection.

The Court: So received and marked. [184]

The Clerk: Defendant's Exhibit HH in evidence.

(The device referred to was marked Defendant's Exhibit HH for identification and received in evidence.)

Q. (By Mr. Flam): I show you Exhibit HH. Now, can you compare that Exhibit HH with the drawing of this tuner that you produced?

A. Do you want this exhibit identified so that I can refer to it by number?

Mr. Flam: I will offer that drawing in evidence in lieu of the physical model.

The Court: It will be received and marked as an exhibit.

The Clerk: Defendant's Exhibit II in evidence.

(Testimony of LeRoy J. Leishman.)

(The drawing referred to was marked Defendant's Exhibit II and received in evidence.)

Q. (By Mr. Flam): In what way does the structure shown in Exhibit II differ from that of Exhibit HH?

A. In Exhibit HH we have recesses in the rocker through which the plunger passes, and the physical axis of the tappet becomes coaxial with the axis of the rocker when the two are in full engagement. That is on Exhibit HH, which is the same as the radio condenser tuner before Judge Beaumont in the case of Radio Condenser and General Instrument Corporation vs. Leishman. In the device illustrated on Defendant's Exhibit II, instead of having the [185] recess in the rocker so that one of these elements can nest within the other, the recess has been made in the tappet. That has been referred to as a phantom axis. Of course, it necessarily has to have an axis of rotation if it is going to turn. But in this case the tappet shown in red, which is No. 3 on Defendant's Exhibit II, the tappet rotates on its outer periphery, and when the tappet is in full engagement with the arms of the rocker 4 and 4, which have been colored green on these exhibits, then the axis of the tappet 3 becomes coaxial with the axis of the rocker, which is in the center of the shaft 10. I think it can be pretty well seen on this drawing that the outer periphery or outer circle curve of the tappet 4 has a center which it would be right in the

(Testimony of LeRoy J. Leishman.)

center of No. 10 where the axis of the rocker is located. So these two members, the rocker and the tappet, have the same coaxial relationship that we have been discussing, but the phantom axis or recess has been made in the tappet instead of in the rocker. It is necessary to cut one or the other members away so that one can nest inside of the other, and of course it is mechanically immaterial which one has the recess.

Q. Did any other manufacturer make a device in which the rocker and the tappet became coaxial in the fully engaged position for a radio tuner?

A. Stewart-Warner made a tuner [186] having a rocker and a tappet, the axes of which became coaxial in the fully engaged position. This came on the market, as I remember it, in 1938, and it was a very close copy of the Crosley tuner. It had about the same size and in details it very closely followed the Crosley design.

Q. When did you first become aware that General Motors Corporation, the plaintiff here, was making this type of tuner in which the tappet and the rocker became coaxial in the fully engaged position?

A. When the declaratory judgment complaint was filed in this case.

The Court: The file mark shows September 20, 1946. Is that the date you are referring to?

The Witness: Yes, when the papers were served on me I had my first notice that General Motors

(Testimony of LeRoy J. Leishman.)

was making a device of this kind. I had possibly seen cars that contained some of these tuners, but I had only seen the buttons and I didn't know what was behind the instrument panel. General Motors had previously used some other designs, and I had assumed, without investigating them, that it was some other type of tuner, and I didn't know until this complaint was filed that they were using the coaxial rocker and coaxial tappet construction.

Mr. Flam: Your Honor, I have in my hand a model or, rather, an embodiment of Plaintiff's Exhibit 2 in the form of a production model, and I think it was furnished to Mr. [187] Leishman at the request of Mr. Leishman from General Motors. I would prefer to have Mr. Leishman take this production model rather than Exhibit 2, and I offer it in evidence.

The Court: So received and marked.

Mr. Lyon: No objection, your Honor. I will state that I am informed that this exhibit which has just been offered to the court is a standard production model of General Motors.

The Clerk: Defendant's Exhibit JJ in evidence.

(The device referred to was marked Defendant's Exhibit JJ and received in evidence.)

Mr. Lyon: And that corresponds to Plaintiff's Exhibit 2 to the complaint, your Honor.

Mr. Flam: This is Exhibit 2, too, your Honor, but it is more like a laboratory model (indicating).

(Testimony of LeRoy J. Leishman.)

Mr. Lyon: That was just to illustrate the tuner itself; but this last exhibit illustrates the tuner as it is built with the accompanying apparatus.

Q. (By Mr. Flam): Does this tuner Exhibit JJ embody the structure of a coaxial tappet and rocker in the fully engaged position?

A. I have examined this, and it does. However, there is a good deal of structure on here, and I think that since Mr. Lyon has admitted in his preliminary statement——

Mr. Lyon: I think we even have a better model that you can use now. We have taken an exact duplicate of Exhibit JJ [188] and peeled off the parts down to the single unit, so that the court can see the simplest form of the structure, and I haven't any objection to the witness using this for his illustration to the court.

The Court: This looks to me—I am referring to Exhibit No. 2 to the complaint in this action—like the simplest and the least complicated. That is, visually it is.

Mr. Lyon: It is even simpler than this specimen I have here, but this specimen I have here has more complete operating parts. I don't know which one the witness would prefer to use. He can use any one he wants to, as far as I am concerned. This last specimen that I handed the witness is another production device just off the regular production line, except that parts have been taken out so as to simplify the observation.

(Testimony of LeRoy J. Leishman.)

The Court: You had better have that marked for identification, Mr. Clerk.

The Witness: I think this device will——

Mr. Flam: Can I merely substitute the exhibit number, then, and withdraw this in place of the one the witness has, and mark that JJ in evidence? Is that satisfactory?

Mr. Lyon: That is satisfactory to me.

The Court: JJ is withdrawn, and in lieu thereof this device which the witness has in his hand will be substituted as Defendant's Exhibit JJ. Just take the tag off and put it [189] on the other one.

Now, if I understand, Mr. Leishman, Exhibit JJ in your opinion is a counterpart of Exhibit 2 that is annexed to the complaint, with some additions mechanically that do not in any manner affect what you regard to be the gist of the patent in suit and the claims involved in this action?

The Witness: That is correct, your Honor.

Q. (By Mr. Flam): Can you explain to the court, if necessary by the aid of charts, just what the structure of this Exhibit JJ is?

A. I can explain the structure, I think, very well by means of Model JJ in conjunction with Plaintiff's Exhibit 2 with the complaint.

I will first explain Defendant's Exhibit JJ. I am going to turn it to a position in which the buttons are on the bottom so that certain features with which the court may not be familiar, and which we haven't had occasion to discuss, may first

(Testimony of LeRoy J. Leishman.)

be described. On all the tuners with which any kind of an actual impedance varying device have been used, have been attached, those impedance varying devices or tuning devices have been variable condensers; the members with rotating leaves that move into stationary leaves. That device is called a condenser, and that is the most common type of mechanism or device that actually does the tuning in the set. And on the tuners on which a variable condenser [190] has been attached, the actuator or automatic tuning device proper positions the rotor of the variable condenser to the proper position.

In defendant's model or Exhibit JJ, instead of having a variable condenser a difficult type of impedance aying structure is used. There are coils in this device wound around small tubes. One may be seen in the center, because the surrounding shields or cam have been removed, and cores having a special structure move in and out of those, and actual tuning is accomplished by how far those cores protrude into the coils. This type of tuning is called permeability tuning. I don't know that it is necessary to go further into the technical meaning of these terms. All we need to know is that the automatic tuner proper is going to determine how far those plungers pass inside of the coils.

I will turn the device upside down so that we can see the rocker structure. I am turning JJ upside down. Here the rocker consists of two bars

(Testimony of LeRoy J. Leishman.)

centrally pivoted at the two opposite ends, and the rocker is mechanically connected to the three cores so that the angular movement of the rocker determines the distance that the cores move into the coils.

In the commercial form of this device there are a plurality of plungers, one of which is represented as shown on Defendant's Exhibit JJ.

Mr. Lyon: Mr. Leishman, perhaps it would help the court [191] if you would care to have a separate plunger with its lock, we can mark that as an exhibit and it might help you to explain the plunger to the court.

The Witness: I think I can explain the plunger better on this.

The Court: By "this" you mean Exhibit 2 that is annexed to the complaint?

The Witness: That is correct, your Honor.

There is mounted on the plunger structure a tappet which has, in general, the shape of the tappets on most of the other tuners here in evidence, and that tappet is fitted to the plunger structure, and when the tappet is in full engagement with the opposite arms or bars of the rocker the axis of the tappet becomes coaxial with the axis of the rocker, the relationship that we have discussed in most of these tuners and demonstrated in conjunction with models yesterday.

Aside from the difference that we have mentioned here, which has to do with the movement, of course,

(Testimony of LeRoy J. Leishman.)

in and out of coils instead of the operation of a variable condenser, this tuner has a very interesting way of locking the tappet. The means of locking the tappet is not a matter that is claimed in any of these claims, and I think Mr. Lyon will agree that it has nothing to do with the patent matter here under discussion.

Mr. Lyon: I can't quite agree with that, because I think [192] we will show that it is necessary to use an entirely different type of lock when you are employing a plunger such as in Exhibit JJ from the type of lock which is illustrated in the re-issue patent in suit, and which is adapted for a lever instead of a plunger.

The Witness: The lock, of course, is not an element of any of the claims here in issue. But on this device instead of having a screw that is used to control a clamping means for locking the tappet in position, you just pull out on the button, then you tune the set so that the stations perfectly tune in, and when you pull the plunger button out that releases the cam so that it is free to rotate around its center of rotation, around its axis of rotation, then the act of pushing it in causes the tappet first to take the position of the rocker and to become locked up. The tappet, however, doesn't have any stops on it, and I turned it too far. I will move it up a little bit so that it will engage. When you push this in—this is not working right. I know General Motors intended it to work. I mean it

(Testimony of LeRoy J. Leishman.)

is catching. This one is working all right. First the tappet moves to take the position of rocker, no matter what position we have the rocker in the tappet moves, and the further pushing of the plunger locks the tappet in position. But as Mr. Lyon stated yesterday in his opening statement the axis of the tappet in this device becomes coaxial with the axis of the [193] rocker.

Mr. Lyon: Mr. Flam, in connection with the offer of Exhibit JJ and the witness' explanation, are you willing to stipulate that for the purpose of this case Exhibit JJ and its corresponding exhibit 2 to the complaint is the same as the Associated device held not to infringe by the Circuit Court of Appeals in the Associated case and the Radio Condenser and General Instrument devices held not to infringe on the appeal from Judge Beaumont's decision?

Mr. Flam: They are the same to the extent that they do have a plunger, a tappet adjustably mounted on the plunger, and a rocker; and they are further the same by virtue of the fact that the tappet and the rocker become coaxial when in full engagement. I think patent-wise you might say they are the same. They are not the same in ultimate design by any means, your Honor.

Mr. Lyon: But for the purpose of this case, the issues of this case, they present identically the same questions as the devices in those other cases that I have referred to, is that to be understood?

(Testimony of LeRoy J. Leishman.)

Mr. Flam: I don't know about the identical part. They certainly are the same as far as the assertion on our part that the tappet and the rocker would comprise infringement when they become co-axial. And that, of course, is true about these General Motors devices. [194]

Q. (By Mr. Flam): Can you compare the structure of this Exhibit JJ with your tuner shown in the reissue patent in suit?

A. Yes, I have a chart that was made for such an explanation.

Q. Do you happen to have a copy of this for Mr. Lyon? A. No, I don't. [195]

* * *

Mr. Flam: I will ask that it be marked for identification for the present, your Honor.

The Court: So ordered.

The Clerk: Defendant's Exhibit KK for identification.

(The chart referred to was marked Defendant's Exhibit KK for identification.)

Q. (By Mr. Flam): Now will you proceed with your explanation in connection with Exhibit KK for identification?

A. On the right-hand side of the chart Defendant's Exhibit KK is shown the structure—the parts shown in the patent that are used to tune in a radio set and which are the parts in the claims at issue; and on the left-hand side of the chart we

(Testimony of LeRoy J. Leishman.)

have drawings of the pertinent parts from Plaintiff's Exhibit 2 tuner. On the right-hand side we have five figures designated as Fig. L-1, Fig. L-2, Fig. L-3, Fig. L-4, and Fig. L-5, that show different positions of the elements with respect to each other, and the corresponding positions for Plaintiff's Exhibit 2 tuner are shown on the left-hand side of the chart and designated, respectively, Fig. GM-1, GM-2, GM-3, GM-4, and GM-5. In Figure L-1—

Mr. Lyon: Before the witness begins to use the chart, your Honor, I would like to have it appear definitely of record that the witness in reproducing the figures that he says correspond to the patent in suit on the right-hand side of this exhibit, he has eliminated the second rocker and [196] second tappet, and the mechanism which enable the device shown in the patent in suit to service both the visual signal and the audible signal in the television set. I think you will admit that.

The Witness: That is correct. I believe I stated that the figures showing the Defendant's structure include the elements from the figures shown in the patent that are used in tuning a radio set. The patent states that the device is for tuning either a radio set or a television set, or both, and the parts shown here are those that are concerned with tuning a radio set. [197]

* * *

Q. (By Mr. Flam): If you can avoid any reference in your testimony to argumentative matters

(Testimony of LeRoy J. Leishman.)

about what the patent shows, I think it will be better.

A. I merely wanted to identify what these elements are. The rocker, cross-sectional portions of which are shown in green on the figures on the right-hand side of Chart KK, correspond to rocker 48 shown in the patent, and the red tappet in each of the figures showing the defendant's structure corresponds to tappet 61 in the patent. The rocker 48 in Figure L-1 is shown in the position in which the right-hand end is elevated above the left-hand end and the tappet is shown completely out of engagement with the rocker. The spring 73 holds the lever and the plunger section in the [198] center in an upward rest position so that the tappet is out of engagement with the rocker.

In Figure GM-1 the rocker from Plaintiff's Exhibit 2 tuner is shown with the rocker bars indicated in green and designated by the reference characters GM-48, and the tappet shown in pink or red is designated by GM-61. In Figure GM-1 the plunger is held in an upward position by means of the returning spring GM-73, so that the tappet is completely out of engagement with the rocker GM-48.

In Figure L-2 the tappet 61 of defendant's structure is shown with one arm of the tappet just in engagement with one arm of the rocker 48. The rocker being shown in the same angular position as indicated in Figure L-1.

(Testimony of LeRoy J. Leishman.)

In Figure L-5 the tappet is shown completely in engagement with the rocker 48.

In Figure GM-2 the rocker member GM-48 is shown in the same angular position as the rocker 48 in defendant's structure illustrated in Figure L-2, and one arm of the tappet GM-61 is just in engagement with one arm of the rocker GM-48. And then in the lower figure GM-5 the tappet GM-61 is shown in complete engagement with the rocker GM-48, and in the completely engaged position the axis of the tappet GM-61 is coaxial with the axis of the rocker GM-48, just as the axis of the tappet 61 in Figure L-5 is coaxial with the axis of the rocker 48 in the completely engaged position.

Is that a sufficient explanation, Mr. Flam?

Q. Yes.

Mr. Flam: I offer the chart in evidence.

The Court: It will be received and marked.

The Clerk: Defendant's KK in evidence.

(The chart referred to was marked Defendant's KK, and was received in evidence.)

Q. (By Mr. Flam): I will show you Plaintiff's Exhibit 1, which is a mechanism attached or made a part of the complaint.

Mr. Lyon: We have a simplified duplicate of that, your Honor, with a lot of parts taken off, so that the witness can explain the material points more readily to your Honor.

I hand it to counsel for the defendant.

(Testimony of LeRoy J. Leishman.)

The Court: What do these purport to be, commercial structures?

Mr. Lyon: Yes, these are taken directly from the production line, a specimen of regular current production, your Honor. The particular specimen that was filed with the complaint, Exhibit 2, has quite a lot of parts on it, and we have produced an exact duplicate taken from current production, which I have just handed counsel, which is easier to see the parts that you will be interested in.

The Court: He is talking about Plaintiff's Exhibit 1 now. He has had 2 here. [200]

Mr. Lyon: I should have said 1.

The Court: Then there are two commercial structures?

Mr. Lyon: Two different commercial devices.

Mr. Flam: I offer in evidence the model just produced by counsel for plaintiff.

Mr. Lyon: This second model has a different form of plunger and locking device. I don't know whether your Honor is interested in that. I gave you one of the plungers and locks for Exhibit JJ. Here is one for this model, if you care to use it.

The Court: Do you want to use the plunger, as well as the rest of the device, as has been suggested?

The Witness: I haven't seen the plunger.

(An object was handed to the witness.)

The Witness: I think it would be very well to use not only the plunger, but the two models——

(Testimony of LeRoy J. Leishman.)

The Court: What is that exhibit, Exhibit JJ?

Mr. Flam: No. Exhibit 1.

The Witness: The model Exhibit 1. And I would also like to use the exhibit that has just been offered. Does this have an identifying number yet?

Mr. Flam: No. I offered it in evidence.

The Court: It will be received and marked. As I understand, it is represented by the plaintiff that this exhibit which is now marked as what, Mr. Clerk? [201]

The Clerk: Defendant's Exhibit LL.

The Court (Continuing): LL is the same as Exhibit 1, that is annexed to the complaint, with some of the mechanism that is immaterial to this case divested from it?

Mr. Lyon: That is correct, your Honor.

Mr. Flam: And possibly some of the mechanism that might be of pertinence is not present here, but in the complete model.

Mr. Lyon: There may be some pertinence to some of the other mechanism, but the mechanism has been removed to enable the court to see most easily the tappet and plunger structure and the rocker structure.

Q. (By Mr. Flam): Do you want to talk about the plunger?

A. I would like to talk about all three of them.

Mr. Lyon: I would like to have this lock and the one for Exhibit JJ identified, Mr. Flam.

(Testimony of LeRoy J. Leishman.)

The Court: Is there any difference between the plungers?

Mr. Lyon: They are quite different, your Honor.

The Court: Let's identify the one and attach it.

Mr. Flam: This one I am offering now relates to Exhibit JJ.

Mr. Lyon: Could it be called JJ-1?

The Court: Yes.

Mr. Flam: For identification.

The Clerk: JJ-1, for identification. [202]

(The device was marked as Defendant's Exhibit JJ-1, for identification.)

The Court: You had better attach JJ-1, for identification, to JJ, Mr. Clerk.

Are you offering the other plunger, also?

Mr. Flam: I would like to have this plunger mechanism for explanation of Exhibit LL.

The Court: Mark that as Exhibit LL-1, and attach it to Exhibit LL.

The Witness: I would rather you wouldn't attach it for the time being. I want to use it.

(The device was marked as Defendant's Exhibit LL, for identification.)

Q. (By Mr. Flam): Can you explain to this court the mode of operation and construction of this tuner LL?

A. I think it would facilitate this explanation if I can—and since it is admitted that they are all the same—if I can pass from LL to Plaintiff's

(Testimony of LeRoy J. Leishman.)

Exhibit 1 in the complaint, and explain them interchangeably here. It will facilitate the explanation, I am sure.

I suggest that because there are certain differences which it is agreed are immaterial, but I think it should be pointed out to the court what those differences are, so that it will be known what is material and what isn't.

On Defendant's Exhibit LL the rocker is shown connected [203] directly to the rotor plates or blades of a variable condenser. In Plaintiff's Exhibit 1 filed with the complaint the rocker it attached to the movable cores of a plunger—that is, of a variable permeability tuner of the type that was shown on Plaintiff's Exhibit 2 to the complaint.

Mr. Lyon: I might explain, your Honor, that this tuner of the type which is represented by Exhibit 1 to the complaint and LL here are used by the General Motors Corporation both for tuners of the condenser type and tuners of the permeability type. If that will explain it, one has the condenser type on it and one has the permeability type.

The Witness: As far as the action of the automatic tuning mechanism, it is immaterial whether you use variable permeability tuning or whether you use variable condenser, so that I think we are all agreed it is immaterial in these devices. [204]

* * *

Q. (By Mr. Flam): Will you go ahead with your explanation of the tuner Exhibit LL?

(Testimony of LeRoy J. Leishman.)

A. The tuner Exhibit LL has the recess in the tappet instead of in the rocker, in order to permit the axis of the tappet to become coaxial with the axis of the rocker in the fully-engaged position. In that respect the construction is the same as that shown on Defendant's Exhibit II.

On Defendant's Exhibit LL there is a single tappet, and [206] I have arranged the tappet so that it is now loose and it can be observed that the tappet is free to turn on its external periphery, so that it can take the position of the rocker. It turns on the external periphery. After you position the rocker to the position required to tune in a given set you push in the plunger and the tappet rotates on its phantom axis until the two points of engagement come in contact with the rocker on opposite sides of the axis, and the coaxial relationship we have discussed is still here, but instead of hollowing out the rocker to permit the tappet to go inside of the rocker, the tappet has been hollowed out to permit the axis of the rocker to go down inside of the tappet. Just a reversal there; the opposite member is hollowed out.

That same structure, of course, is used on Plaintiff's Exhibit 1.

The lever LL-1, which is attached to Defendant's Exhibit LL, shows the tappet structure, and when we loosen it it can be seen how the tappet rotates around the center, although instead of having a physical center, it is what you might call an external

(Testimony of LeRoy J. Leishman.)

pivot or circumferential pivot. But it has, of course, an axis of rotation, which is at the center of that circle.

I think that is a sufficient explanation of these models, Mr. Flam, unless you have something that you want to further [207] inquire about.

Q. Can you use this chart for making a further explanation of this mechanism?

Mr. Flam: I would like to have the chart marked for identification.

The Court: Mark it, Mr. Clerk.

The Clerk: Defendant's Exhibit MM, for identification.

(The chart was marked as Defendant's Exhibit MM, for identification.)

Q. (By Mr. Flam): Go ahead.

A. In this chart the figures on the right-hand side are identical to the figures on the right-hand side of the previous chart, which was Defendant's Exhibit KK. The chart that we are now explaining is Defendant's Exhibit MM. On the left-hand side we have illustrated the corresponding positions of the corresponding parts in Plaintiff's Exhibit 1 tuner.

In Figure GM-1 the tappet is shown completely out of engagement with the rocker GM-48 colored green, and it is held in that retracted position by spring GM-73, which corresponds in function to spring 73 in Figure L-1 of the structure from the patent.

(Testimony of LeRoy J. Leishman.)

In Figure GM-2 one side of tappet GM-61 is just engaging one arm of the rocker GM-48, just as in Figure L-2 one arm of the tappet 61 is just engaging one arm of the rocker 48. [208]

In Figure GM-5, the tappet GM-48 is shown in complete engagement with the rocker GM-48, just as the corresponding engaged position for the patent structure is shown in Figure L-5.

And it will be noticed that the tappet in Figure GM-5, the tappet GM-61 in the full engaged position has its axis coaxial with the axis of the rocker GM-48.

The axes are indicated by lines going to the reference figures GM-60 and GM-S.

In Figure GM-3 the tappet is out of engagement with the rocker, the position of the tappet and the manually operable means being the same as in GM-1, but the angular position of the rocker GM-48 is different from what it was in Figure GM-2, or Figure GM-1.

In Figure GM-4 one side, one arm of the tappet GM-61 is just engaging one arm of the tappet GM-48, the rocker being in the same position as in Figure GM-3, and the position of the rocker in GM-4 is generally the same, same angular position as the rocker 48 in L-4.

Then, of course, no matter what one of these various angular positions that the rocker may be found in, when the tappet is in complete engagement the tappet, if having been previously set, will rotate

(Testimony of LeRoy J. Leishman.)

the rocker to the position for which the tappet was adjusted.

Now, in this particular structure I want to call attention [209] to the fact that in Figures L-1, L-2, L-3, and L-4 and L-5 there is a plunger portion on the lever, that actually carries the tappet, and that plunger portion carrying the tappet moves down with the tappet inside the rocker, when the tappet moves to the fully-engaged position shown in L-5.

In Plaintiff's Exhibit 1 tuner the mechanism is operated by a lever, GM-F, and the lever moves the plunger downward so the tappet can be brought into engagement with the rocker. The various positions of the lever from the position shown in GM-2 are shown in the respective figures, in Figure GM-2 the lever has been rotated on its pivot somewhat and the plunger has been pushed part way down so that the engagement is started, and in GM-5 the lever is rotated around its pivot to the position that brings the plunger down so that the tappet can come to the fully-engaged position. In each case the mechanism is operated by levers and the lever acts to bring the plunger down to carry the tappet to the coaxial position with the rocker.

Is that a sufficient explanation?

Q. (By Mr. Flam): I would like to have you point out to the court the lever on the actual mechanism itself. That is Exhibit No. 1, Plaintiff's Exhibit No. 1.

A. In Plaintiff's Exhibit 1—by the way, we have

(Testimony of LeRoy J. Leishman.)

a model here, I hate to get this complicated with models, but [210] there is a case on here which obscures part of the mechanism, and on the other model that hasn't been introduced on our desk, and which was furnished to us by General Motors, the case has been taken off and we can see the lever construction much better.

The Court: Well, I guess one more won't hurt any.

The Witness: Why wouldn't it be all right to reverse these models and introduce that instead of this? This one just has a case on and more is covered up. Why not use that one instead of this?

Mr. Lyon: Unfortunately the one you want to take out is Exhibit 1 to the complaint, and I think that had better stay.

The Court: I think we had better leave that one in.

Mr. Flam: If Mr. Lyon doesn't object, I would like to offer that one in evidence. It is a piece of apparatus that was furnished to Mr. Leishman by the plaintiff in this case to exemplify this tuner mechanism corresponding to Exhibit 1.

Mr. Lyon: I have no objection, your Honor. It is another production specimen with what they call the case left off this time.

The Witness: The case off of the forepart. By removing it the pivot of the lever can be seen extending along——

The Court: What exhibit will it be, Mr. Clerk?

(Testimony of LeRoy J. Leishman.)

The Clerk: Defendant's Exhibit NN in evidence.

(The device referred to was marked Defendant's Exhibit NN, and was received in evidence.)

The Witness: On Defendant's Exhibit NN the various levers are pivoted on a shaft that extends along the front of the radio receiver, and when the buttons are pressed the lever moves around its fulcrum or pivot, as levers always do, pressing down on the plunger, in order to carry the tappet down to the engaged position.

I think it might be well for the court to know on this particular mechanism how the tappet is adjusted. Of course in general it is the same as on Defendant's Exhibit LL, but the adjusting screw is covered up by the lever, so you bring up the lever and the adjusting screw flips out so that it can be loosened in order to loosen the tappet, and then after the station has been tuned in—after the set has been tuned to the station desired, then the button is pressed down so that the tappet will take the position of the rocker, and then is brought out again so that the screw is again accessible and can be tightened. And then after it has been tightened it is pushed back and the button latched down and it is ready for operation. Whenever the button is again actuated the mechanism will return to the position to which it is tuned.

Mr. Flam: I offer the chart MM in evidence.

The Court: It will be received.

(Testimony of LeRoy J. Leishman.)

The Clerk: Defendant's Exhibit MM in evidence.

(The chart referred to was marked Defendants' Exhibit MM, and was received in evidence.)

Q. (By Mr. Flam): I think you mentioned yesterday, Mr. Leishman, that on a telephone dial type of tuner and motor-driven type of tuner automatic frequency control circuits were necessary?

A. That is correct. [213]

Q. Were such circuits necessary in connection with the tuners of the type in which the tappet and rocker are used and in which the tappet and rocker become coaxial in the fully engaged position?

A. No. Automatic frequency control circuits are not required with tuners of the type that you have inquired about.

Q. What does the automatic frequency control circuit usually consist of?

A. It consists of a circuit too complicated to describe. But in connection with the circuit it is necessary to use at least one tube. I think Dr. Mackeown being an expert in electronics can explain that better than I can. But it was a circuit that added an appreciable amount to the cost of the radio receiver, and it isn't required with tuners of the coaxial rocker and tappet construction.

The Court: Is there any use of exploring that if it isn't in this case at this time? How would it enlighten the case here?

(Testimony of LeRoy J. Leishman.)

Mr. Flam: Regarding the use of automatic frequency control circuits, your Honor?

The Court: Yes.

Mr. Flam: This very simple mechanism that is the subject matter of the patent provides a tuner so accurate that these extra special circuits may be discarded, and it [214] goes to a showing of invention. Up to 1938 these telephone dial type tuners and motor-driven tuners were used commercially because that was the best the radio industry had, but it couldn't be used without this expensive circuit.

* * *

Q. (By Mr. Flam): I will ask this question, then: Did the development of the automatic frequency control circuits make it feasible to use your devices, including a coaxial rocker and tappet arrangement that you have testified about?

A. No. On the other hand, instead of the automatic frequency control circuit making it possible to use my device, my device made it unnecessary to use the automatic frequency control circuit. It didn't in any way contribute [217] to the use of my coaxial rocker and tappet tuner. It wasn't required. Insofar as I know it has never been used with any radio set using a coaxial rocker and tappet tuner.

Q. You mentioned yesterday that motor-driven tuners had been used, I think you said, in the years 1936 and 1937. Were they in common use after the type of tuner exemplified by the Crosley device then on the market? I want to find the exhibit.

(Testimony of LeRoy J. Leishman.)

A. I don't have it up here.

Q. Here it is. That is Exhibit BB.

A. No. Those that were already in the hands of the public probably continued to be used. But as far as I know, no manufacturer manufactured a motor-driven tuner after that time. If they did, they were a rarity and they were an unusual thing in the lines of radio manufacturers. I don't know of any.

Q. What about the telephone dial type of tuner, did they continue in popularity after February or the latter part of the year 1938?

A. As far as I know, no new radio receiver, that is, no newly designed radio receiver, came on the market after the coaxial rocker and tappet tuners appeared. Some manufacturers may have continued to make some models that were already in production, but no new models were introduced using telephone dial type tuners. [218]

Q. When your patent No. 2,108,538 issued, this patent being in evidence as Exhibit Q, did you know of any other patent that was applied for earlier than yours which showed the coaxial position of the rocker and the tappet in the tuned-in position?

Mr. Lyon: If your Honor please, I think that patent should be produced if there is one. We don't want to have his testimony as to what are the contents of some written instrument.

The Court: I suppose he is trying to negative it. Aren't you?

(Testimony of LeRoy J. Leishman.)

Mr. Flam: Yes.

A. I don't know of any patent that was applied for before the -538 patent issued that showed the coaxial rocker and tappet construction.

Q. (By Mr. Flam): After that patent issued have you run across any patents or patent applications that showed that relationship?

A. Yes, aside from a patent applied for by the Crosley Corporation on their tuner, which inadvertently didn't show the rocker and tappet as perfectly coaxial, although the actual device was coaxial——

Mr. Lyon: If your Honor please, this is an argument.

Q. (By Mr. Flam): Do you have the file wrapper of the Crosley application? [219]

A. Yes, it is here, I think, in the case there containing a good many file wrappers.

Q. We have a file wrapper that was introduced in evidence in the Associated Wholesale Electric case as Plaintiff's Exhibit 21, the file wrapper of application of Howard J. Tyzzer, filed February 24th, 1938, serial No. 192,258. How were you able to get a file wrapper of this application, Mr. Leishman?

A. The patent had not yet issued, but an application owned by me was in interference with the Tyzzer application, and when interferences arise in the Patent Office all parties to the interference are entitled to obtain file wrappers of the other applications in the same interference, and that is how I obtained this.

(Testimony of LeRoy J. Leishman.)

Q. Can you point out in that file wrapper where the tappet and rocker are shown?

A. The tappet and rocker are shown on the pages of the drawings on pages 18 and 19 of the file wrapper.

Q. Does that show a coaxial arrangement with a tappet and rocker?

A. Although the tuner had a rocker and tappet that were coaxial, in this drawing the draftsman who drew them up, and probably had this coaxial tappet and rocker right before him, apparently didn't realize the importance of it and he didn't make them coaxial. [220]

Mr. Lyon: I object to that, your Honor, as purely speculative and interpreting a written instrument which is the province of the court.

The Court: Yes, I think so. Sustained.

Mr. Flam: I offer the file wrapper in evidence.

The Court: It will be received.

The Clerk: Defendant's Exhibit OO in evidence.

(The file wrapper referred to was marked Defendant's Exhibit OO, and was received in evidence.) [221]

* * *

Q. Do you know how many tuners have been sold under your license with the Crowe Name-Plate & Manufacturing Company that incorporates the coaxial rocker and tappet feature?

A. Only about 50,000.

(Testimony of LeRoy J. Leishman.)

Q. Do you have any knowledge as to the volume of tuners sold by the Crosley Corporation as shown in Exhibit BB?

Mr. Lyon: I would like to know the source of the knowledge [223] when the witness is asked those questions, if he has any knowledge I would like to know what it is before he gives an answer.

Mr. Flam: I was going into that.

Q. (By Mr. Flam): Do you have any knowledge of it, first of all?

A. The only knowledge I have is the knowledge furnished by the Crosley Corporation as evidence in their behalf in the Associated case, and it was to the effect that 285,000 of them had been made previous to the time when the information was furnished.

Q. That would be up to what year?

A. I think it would be the Fall of 1940. That case was tried in 1940, and I think the information was supplied at the time of the trial or shortly before.

The Court: The opinion is dated January 31, 1941. [224]

The Witness: I think the case was tried in October. Somehow the date of October 20th is in my mind. But that may be incorrect.

Mr. Flam: I may call it to your Honor's attention in the record of the Associated Wholesale Electric case, Volume I, pages 17 and 18, which are answers to Plaintiff's interrogatories. [225]

(Testimony of LeRoy J. Leishman.)

Q. (By Mr. Flam): Do you know for what purpose the Radio Condenser Manufacturing Company and General Instrument Corporation were manufacturing these tuners shown in Exhibits II and HH?

A. They were manufactured for sale to radio manufacturers to be installed in the radio receivers that they, in turn, sold to the public through their jobbers and dealers.

Q. That is, they themselves did not incorporate these tuners in any sets, they were sold to set manufacturers, is that correct?

A. That's correct. [226]

Q. What is their position in the industry with regard to the other manufacturers of this type of equipment for radio manufacturers?

A. As far as I know, all of the coaxial rocker and tappet tuners that have been made since 1938 were made by Radio Condenser, General Instrument Corporation, and Crowe in conjunction with Quality. But by far the greater amount were made by Radio Condenser and General Instrument Corporation. Most manufacturers bought tuners from those companies. In fact, they sold tuners to a large number of manufacturers for their radio receivers. [227]

* * *

Q. (By Mr. Flam): Were plungers known in the automatic tuning art when your patent No. 2,108,538 was granted?

(Testimony of LeRoy J. Leishman.)

A. Yes, a good many patents had issued at that time on tuners operated by plungers. [229]

* * *

Q. (By Mr. Flam): Can you state in your own words what is meant by a plunger, without referring to a dictionary?

A. A plunger is any device that moves in and out of something else with a reciprocating motion, as does the little cores that move in and out of the coils in the permeability turners that we have discussed here, or the iron cores in sucking coils or solenoids. [236]

Q. Do plungers have to move in a straight line?

A. No. So long as they have a reciprocating motion and move into something they are still plungers.

Q. Do you have any examples of such plungers that do not move in a straight line?

A. Yes, sir, I do. They are used in——

Q. Let me have them.

A. Do you want all of them, or one at a time?

Q. One at a time.

A. This tells what they are.

Mr. Flam: Mr. Lyon, we haven't bothered to get a complete record——

The Court: I can't hear you, Mr. Flam.

Mr. Flam: We haven't bothered with getting a complete record of the dates of publication of these books of which we took photostatic copies.

(Testimony of LeRoy J. Leishman.)

Of course, it is possible for us to do that if counsel would insist upon our doing it.

Mr. Lyon: No. If the books are competent, I don't object to using photostat copies, and I don't require any proof of the books, if the title page appears and the date.

Q. (By Mr. Flam): Will you go ahead, Mr. Leishman?

A. Do you want me to refer to portions in these books that are pertinent?

Q. Just refer to the title of the book and the place where it mentions plungers. [237]

A. One such use of plungers is mentioned in *The Elements of Alternating Currents* by W. S. Franklin and R. B. Williamson, published by the Macmillan Company of London in 1901, and on page 41 of that book the paragraph numbered 36—

Mr. Lyon: I think the book speaks for itself if it is competent.

Q. (By Mr. Flam): You are referring to that particular paragraph?

A. I am merely referring to the paragraph marked 36, which refers to plunger-type ammeters and voltmeters. That is the paragraph.

Mr. Flam: I offer this copy in evidence of the book by Franklin and Williamson.

Mr. Lyon: I object on the ground it is incompetent and irrelevant. The witness, I don't believe, has the right on direct examination to bolster up his views with the statements from other people, whether they are in print or not.

(Testimony of LeRoy J. Leishman.)

The Court: If it is a recognized medium of scientific information, I think it is admissible. I do not know what it is. I do not know a thing about it. That doesn't mean that it hasn't great efficacy, however. Objection overruled.

Is this book available here in the United States?

The Witness: Yes. They have a copy in the Los Angeles [238] Public Library. In fact, I borrowed the book from the Los Angeles Public Library. Or else these photostats were made by the Library. I have forgotten which. But at least I had the books.

The Court: The title of the book is as stated on the exhibit, is it?

The Witness: That is correct, that is the title page to identify the book.

The Court: Does it purport to be a book that is devoted only to this specialty of physics, alternating currents?

The Witness: That is correct. And it discusses devices, of course, used in measuring alternating currents and different things pertaining to alternating currents. It is a text, a reference work on the subject.

It also, I think, is printed in New York. You will notice on the title page just above where it says "Macmillan Company" it mentions New York; whereas London appears under it.

The Court: It doesn't seem to be complete. The sentence on page 41 seems to stop with the word "such."

(Testimony of LeRoy J. Leishman.)

The Witness: It was the single sentence that has been indicated that was pertinent.

The Court: Well, if the book is available, of course the other side can get the contextual part. I don't see that there would be any limitation on amplification, or [239] restriction to that which is contained in the first paragraph.

Objection is overruled.

The Clerk: Defendant's Exhibit PP in evidence.

(The documents referred to were marked Defendant's Exhibit PP, and were received in evidence.)

Q. (By Mr. Flam): Do you have any other samples of plungers described in publications, Mr. Leishman?

A. Yes, I have similar photographic copies showing a description and actual drawing——

Mr. Lyon: I don't think the witness should testify as to what the publication shows.

The Court: No. The paper will speak for itself if it is admissible.

Q. (By Mr. Flam): Will you identify this publication to which you are now referring?

A. A Dictionary of Applied Physics, edited by Sir Richard Glazebrook.

Q. What volume and where was it published?

A. A five-volume work, and the volume that I refer to is Volume II on Electricity. This book is published by Macmillan & Company, Limited,

(Testimony of LeRoy J. Leishman.)

St. Martin's Street, London; and this is also available in the United States. It is a reference and a text.

Q. Was that found in the Library here, do you know? [240]

A. As I remember, this book is also in the Los Angeles Public Library.

Q. What page do you refer to?

A. The pages that I have reference to are pages 1018 and 1019.

Q. What is there on 1019 that is of particular interest?

Mr. Lyon: I object to that on the ground that the document speaks for itself.

Mr. Flam: I just wanted to eliminate those parts that are not of any interest, but it is all right if there is an objection.

Mr. Lyon: Counsel can point that out as well as the witness.

The Court: Yes, I think so. The writing is self-explanatory, I take it, and such portions of it that are relevant can be specified.

Mr. Flam: Very well. I offer the document referred to by the witness and entitled A Dictionary of Applied Physics in evidence.

Mr. Lyon: I am not objecting to the use of the photostat copy, but I make the same objection that I did to Exhibit PP.

The Court: Objection overruled.

The Clerk: Defendant's Exhibit QQ in evidence.

(Testimony of LeRoy J. Leishman.)

(The document referred to was marked Defendant's Exhibit QQ, and was received in evidence.)

Q. (By Mr. Flam): Mr. Leishman, I believe you have one more example of the type of plungers referred to in the last two exhibits; can you identify that? A. Yes.

Q. May I have one for Mr. Lyon?

A. Yes.

Q. Will you state what this publication is of which you have produced a photostatic copy?

A. This is a book entitled Electrical Measurement and was a text used in the vocational education program for national defense, and the pertinent page is page 30.

Q. Figure 30 on that page, is that right?

A. Figure 30.

Mr. Flam: Your Honor, I offer this document in evidence, of the Electrical Measurement.

Mr. Lyon: The same objection is entered as to Exhibits PP and QQ, your Honor.

The Court: There is nothing on this proffer that indicates when the material was publicized. It must have been recently if you are referring to the last war.

The Witness: I think it was the last war, your Honor. I don't remember when it was published. My reference to it was only as an example of the type of plunger meters mentioned [242] in the first work referred to.

(Testimony of LeRoy J. Leishman.)

Mr. Lyon: I move to strike the last statement as volunteered. If it was brought in by a question, I would object to it on the ground it is incompetent and no foundation laid. The court will have to determine for itself whether this Exhibit PP refers or does not refer to something that is in Exhibit RR.

The Court: I think so. Anything that will throw light on the problem in physics, the scientific aspect of the alleged invention, which shows that at a time contemporaneously with the patent, activities in these matters were known or were not known, is relevant; but to take something in vocational training since World War II doesn't throw much light upon what was in the mind or what the concept of the patentee or inventor was.

Mr. Flam: Your Honor, I don't believe it is particularly important as to whether it was available to the public before or after the application that matured into a patent. This is merely an illustration of the understanding or definition of what plungers might be like, their appearance, and we expect to show that these plungers have very much the same form as the form of device in the patent in suit upon which the adjustable tappet is mounted.

I think if your Honor refuses to admit this, we have enough in the other two publications, anyway, to show that [243] general type of plunger.

The Court: If I conceive the concrete purpose

(Testimony of LeRoy J. Leishman.)

of the offer, it is to fortify a position that this is a generic patent, and that the use of the terms is broad in its aspect instead of narrow in its application, is that right, is that the concept?

Mr. Flam: Every patent, of course, can be termed generic for whatever it covers, but that is where the trouble arises, we insist that this patent is not limited to any particular way in which these two essential elements are moved together, whether it is a lever or a plunger. Some quibbling has been done by other opponents of Mr. Leishman on that point, and our present line of testimony is an effort to show that so far as the broad definition of a plunger is concerned a plunger is shown in the reissue patent. It happens to be attached to a lever, that's all, and the type of plunger shown in these publications substantiate that. I don't think it is particularly material, if your Honor doesn't feel that this is properly introduced in evidence.

The Court: I will sustain the objection.

Mr. Flam: I would like to have it marked for identification.

The Court: Mark it for identification.

The Clerk: Defendant's Exhibit RR, for identification. [244]

(The document referred to was marked Defendant's Exhibit RR, for identification.)

Q. (By Mr. Flam): Mr. Leishman, in connection with Exhibits PP and QQ that have been received in evidence, can you compare the structure

(Testimony of LeRoy J. Leishman.)

shown or described in these publications with the structure shown in your re-issue patent, Exhibit A?

A. Which is QQ?

Q. QQ is the Glazebrook publication.

A. In the device of Figure 44, if we orient it to a more convenient position for comparison, in which the lower right-hand corner is tilted, we can see the plunger A in Figure 44 that moves into the solenoid or sucking core structure E, and if we look at Figure 2 in the re-issue patent it will be observed that the portion 57 attached to the plunger moves in and out of the rocker 48 in just the same manner, both move in an arcuate or curvilinear line, rather than in a straight line. Both are plungers.

Q. Mr. Leishman, I hand you a chart upon which colored diagrams are present. Will you please identify what these parts are intended to represent?

A. Shown in red we have the tappet as shown in the re-issue patent, and in green we have the rocker shown in the re-issue patent. The figure below is identical to the figure above. [245]

Q. Can you draw in a lever showing the tappet mounted on a lever in the upper picture?

A. (Witness drawing on diagram): There we have it.

Q. Now will you show what a draftsman would need to do to mount the tappet upon a plunger in connection with the lower part of this chart?

A. All you need to do is extend the plunger por-

(Testimony of LeRoy J. Leishman.)

tion and provide guides for the plunger. (Witness drawing on diagram.)

Mr. Flam: I offer the chart referred to by the witness in evidence.

The Court: The record will show that the witness as he narrated his answer was drawing, and the drawings appear in black. Is that black? It looks like it from here.

The Witness: Yes.

The Court: Black pencil drawing. It will be received.

The Clerk: Defendant's Exhibit SS in evidence.

(The chart referred to was marked Defendant's Exhibit SS and received in evidence.)

The Court: Will you point out on your reissue patent in suit where you think that is described other than diagrammatically?

The Witness: I don't know that it is described other than diagrammatically. The portion that I refer to as a portion is the portion 57, shown in Figure 52. That is the [246] portion 57 that moves in and out of the rocker portion.

The Court: You mean Figure 2? You said Figure 52.

The Witness: I beg your pardon. Figure 2, I meant. I meant the portion 57 attached to the lever which portion extends into Figure 2.

The Court: You can't point out anything in your specifications, in the verbiage in your patent, with any greater precision than the diagram itself or drawing itself?

(Testimony of LeRoy J. Leishman.)

The Witness: I might look at it for a minute and see.

In line 35, column 2, of the first page of the specifications of the patent, reference is made to the extension 57. It says:

“The extension 57 carries a pin 60, on which are pivoted tappets 61 and 62 having hubs 63 and 64 respectively, shown most clearly in Fig. 3.”

Then at the bottom of that same paragraph beginning at line 54 the action of the whole assembly in moving up is stated in the sentence which says: “This lever assembly is raised up from the position shown to an inoperative position by spring 73 attached to the lever at 74 and to a stationary support at 75.”

Then referring to the return position on page 2, the first column, beginning at line 30, the patent says:

“When the lever assembly is all the way down, it will be observed from Fig. 2 that the pin 60 is substantially coaxial with the rockers 48 and 54, which means that in this position it is also coaxial with shafts S, 49 and 25 are therefore all approximately equidistant from the fulcrum Q.”

So the position shown in the figures in which the plunger portion 57 will be inside the rocker is indicated in that paragraph, and the raised position is indicated in the earlier portion beginning at line 54 on page 1 of the specification.

Q. (By Mr. Flam): Would it be difficult, Mr.

(Testimony of LeRoy J. Leishman.)

Leishman, to make a plunger type tuner in which the plunger would not go through the rocker entirely? A. No, that is very easy to do. [248]

* * *

Q. (By Mr. Flam): I have Exhibits EE and II before you; can you point out to the court how the plunger is arranged with relation to the rocker in these exhibits? [250]

A. In Exhibit EE the plunger is located all on one side of the rocker, and the plunger 8 doesn't pass through the rocker 4, and in Exhibit II the plunger detours around the rocker, so that the plunger—I don't find a reference number on it—the plunger shown in blue does not pass through the rocker 4.

Q. (By Mr. Flam): Is there any similarity in that connection with Plaintiff's Exhibit 1 device?

A. In Plaintiff's Exhibit 1 with the complaint the plunger does not pass through the rocker, the plunger and tappet construction being substantially like that shown on Exhibit II. The plunger detours under the rocker.

Q. I want to call your attention to the patent of Soffietti.

Mr. Lyon: Exhibit J, Mr. Flam.

Mr. Flam: It is No. 34 in the book of patents.

Q. (By Mr. Flam): Does the plunger pass through the rocker in that structure?

A. No, the plunger does not pass through the rocker in the structure shown in Figure 4 in the

(Testimony of LeRoy J. Leishman.)

Soffietti patent No. 2,388,581, which is No. 34 in Defendant's Exhibit——

The Clerk: It is the book of patents, Mr. Leishman.

A. (Continuing): ——in the book of patents. The plunger is entirely on one side.

The Court: It is Exhibit J. [251]

The Witness: Yes, Exhibit J.

A. (Continuing): ——the plunger in Figure 4 and the tappets are all on one side of the rocker. That, by the way, is Figure 6, not Figure 4. In fact, in each case in this explanation I should have referred to Figure 6, rather than Figure 4.

Q. (By Mr. Flam): I show you the Lane and Mackey drawing Exhibit K-1. Will you state what the relationship is of the rocker and tappet in that exhibit?

A. The tappet plunger and rocker arrangement shown on Defendant's Exhibit K-1, the plunger is all on one side of the rocker 11 shown in green, and the plunger does not pass through the rocker.

Q. When the plunger does pass through the rocker as in some of these exhibits, do the rocker and tappet naturally become coaxial?

A. No. It is necessary that the tappet be especially shaped with respect to the rocker, or that the rocker be especially shaped with respect to the tappet, so that they will come into coaxial alignment.

Q. I think you referred to the Lane and Mackey drawing. What would happen if you passed the

(Testimony of LeRoy J. Leishman.)

plunger through the rocker there? Would it become coaxial?

A. No. In the Lane and Mackey drawing if an opening were to be made in the rocker, and the plunger were to pass [252 and 253] through or into the rocker, the tappet would not be coaxial with the rocker, because they have not been properly shaped with respect to each other in order to achieve that relationship.

Q. I show you Exhibit OO, the Tyzzer file wrapper, that shows a tappet and rocker arrangement in which the plunger passes through the rocker, does it not? A. Yes, it does.

Q. Are the rocker and tappet coaxial in the fully engaged position in that disclosure?

A. Not as shown in the drawings.

Q. Do you have any further diagrams based upon this exhibit to show the court why these parts are not coaxial?

A. Yes, I have photographic reproductions of portions from page 18 and 19 of this file wrapper. I will have to locate them. I have them here. These are figures from those pages.

Q. Can you show the court this drawing that you had made from the Tyzzer application and explain the positions of the rocker and tappet?

A. In Figure 6 shown on the reproduction the tappet has been colored red, this is a photographic reproduction of the tappet as drawn in the patent specification, and I have drawn a rocker in green

(Testimony of LeRoy J. Leishman.)

in conformity with the rocker shown in Figure 2 and Figure 5, and it will be noticed that the axis of the tappet 39, the axis being indicated by the numeral 30, is not in alignment with the axis of the rocker drawn in in green.

Q. Is that rocker shown as No. 7 in Figure 5?

A. Yes, it is. It is additionally possible to draw a line on these figures, Figure 2 and Figure 5, along the edge of the tappet to show that if the tappet were formed as shown in Figure 2 and Figure 5, that the coaxial alignment would not prevail. I can draw such a line.

Q. Can you do so?

A. On the exhibit?

Q. Yes, the exhibit. On the chart which you made from Exhibit OO.

A. I have drawn pencil lines marking them X against the tappet 31 in Figure 2 and against the tappet furthest to the right in Figure 5, and that line represents the plane of the surface of the tappet 7 as shown in Figure 7. So if the tappet 30 in Figure 1 were brought into alignment with the tappet, the tappet would engage a straight line as represented by Figure X. That would be the nearest surface of the rocker 7, and it can be seen that inasmuch as the axis of the tappet 7 would be just about a thirty-second of an inch below the surface of rocker 7, that the axis 30 of the tappet could not possibly come into coaxial alignment with the axis of the rocker 7, if the rocker and the

(Testimony of LeRoy J. Leishman.)

tappet were [255] shaped as shown in these figures.

Mr. Flam: I offer the document referred to by the witness in evidence.

The Court: It will be received.

The Clerk: Exhibit TT in evidence.

(The document referred to was marked Exhibit TT and received in evidence.)

Q. (By Mr. Flam): I think you mentioned yesterday that you had licensed Crowe Name-Plate Manufacturing Company?

A. That is correct.

Q. Do you have any advertisements relating to the licensed devices? I show you this.

Mr. Lyon: Will you read that question to me, please?

(The question was read.)

A. I licensed the Crowe Name-Plate and Manufacturing Company under all of my patents, and the first patent under which I licensed them was the -851 patent which issued in June, 1937. There is an advertisement on page 41 of Electronics for October, 1937, which was introduced as Defendant's physical Exhibit O with the motion for summary judgment. This tuner shown in the advertisement on page 41 is a tuner as constructed according to my disclosure in the application that issued as the -343 patent, which was mentioned yesterday as having means for gaining access to the set screw through tabs on the front of the set.

(Testimony of LeRoy J. Leishman.)

Such an [256] arrangement is shown in the illustration in the advertisement, and the patent number of the then issued patent 2,084,851 is given in the lower right-hand corner of the ad.

Mr. Flam: I offer page 41 of that issue of Electronics in evidence.

The Court: It will be received.

The Clerk: Defendant's Exhibit UU in evidence.

(The document referred to was marked Defendant's Exhibit UU and received in evidence.)

Mr. Flam: Your Honor, I have here a certified copy of certain papers obtained from the Patent Office in connection with William L. Jackie patent which is already in evidence. These are certified documents showing the very large number of interferences which have been declared among Jackie and numerous other inventors relating to automatic tuners. The purpose of this offer is to show that there was very great activity in this period when these interferences were declared, and they are all dated, in connection with the devising of a satisfactory automatic tuner. I offer that in evidence for that purpose, your Honor.

The Court: It will be received.

Mr. Lyon: This interference, as I understand it, doesn't involve any point of Mr. Leishman's patent, or what he contends the point of his patent is. These interferences were about some collateral

(Testimony of LeRoy J. Leishman.)

matter entirely. It seems to me [257] they are far too remote.

The Court: I am not going to examine minutely in the trial of this case each of these pages to determine whether that is true or not. You can discuss it in your briefs, if the case is to be briefed, as to what pertinency it has to the problem before the court.

Mr. Lyon: I appreciate that, your Honor.

The Clerk: Defendant's Exhibit VV in evidence.

(The documents referred to were marked Defendant's Exhibit VV and received in evidence.)

Mr. Lyon: I merely make these objections, your Honor, so when you do have the transcript before you you will know that I am raising the point.

The Court: I am not making notes because we have a transcript, and I am very glad you have. In some of these cases we don't have one.

Mr. Flam: You may cross-examine.

Mr. Lyon: Was that Jackie file wrapper received?

Mr. Flam: I should have shown it to you.

Mr. Lyon: Never mind showing it to me. What exhibit is it?

The Clerk: VV. [258]

Cross-Examination

By Mr. L. S. Lyon, Sr.:

Q. Mr. Leishman, has any commercial device

(Testimony of LeRoy J. Leishman.)

ever been built in accordance with the drawings of your reissue patent here in suit No. 2,827? And by that I include with the double rocker 48 and 54.

A. Will you read the first part of that question again?

(The question was read by the reporter.)

The Witness: No.

Q. (By Mr. Lyon): Has any commercial device ever been built in accordance with the drawings of your reissue patent 20,827? And by that I include that the tappet member is carried by a lever pivoted at a point corresponding to the point Q shown in Figure 2 of your patent drawings. A. No.

Q. The only royalties that you have ever received from any licensees under the patent in suit based on any devices that you contend were manufactured under the patent in suit were from the Crowe Name-Plate—and what other company?

A. They operated in connection with Quality Hardware and Manufacturing Company, but my royalties came through Crowe Name-Plate and Manufacturing Company.

Q. From that company only? [259]

A. That is correct.

Q. One licensee? A. That is correct.

Q. How long has it been since you received any royalties from them?

A. I received no royalties on tuners actually manufactured since the Radio Condenser and General Instrument and General Motors tuners came into general use.

(Testimony of LeRoy J. Leishman.)

Q. Can you just tell us what the date was, instead of the circumstances?

A. I think I received no royalties since 1940.

Q. And the devices on which you did receive royalties from that licensee were all of the type in which the tappet was mounted on a plunger which was not pivoted, is that correct?

A. That is correct.

Q. Are automatic mechanical tuners employing adjustable tappets used primarily for automobile radio sets?

A. I think not. They are used also in household sets, and I think the greater number are used in household sets.

Q. Is that true of the present production of radios?

A. As far as I know it is, but I am not able to give competent testimony on that matter because I haven't examined any radio sets with any degree of care during the last year or two, or since the war, as a matter of fact. All that I have [260] seen is what I might have happened to have noticed in passing windows or in other peoples' automobiles.

Q. Will you name the home radio receivers that are being marketed today that you know employ automatic push button tuning with adjustable tappets?

A. I have paid very little attention to them——

Q. I am not asking you for the argument; just the answer.

(Testimony of LeRoy J. Leishman.)

A. I have seen several, but I can't mention the makes for sure, but I believe that——

Q. I don't want a guess, Mr. Leishman.

A. All right.

Q. Let's talk about the principal home receiver manufacturers. Do you know whether such a tuner is employed on the R. C. A. models being offered for sale at this time?

A. I haven't seen any of their sets.

Q. Will you just answer yes or no whether you know or not? A. No, I do not.

Q. How about the General Electric sets?

A. I have no knowledge of their sets.

Q. How about the Westinghouse sets?

A. I have never seen one of their sets.

Q. How about the Philco sets? [261]

A. To my knowledge I haven't seen one of the current Philco sets.

Q. How about the Stromberg sets?

A. I haven't seen one of those that I know of.

Q. How about the Farnsworth sets?

A. I have never seen a Farnsworth set excepting through a window, and I am not familiar with their line at all.

Q. Don't you know that, as a matter of fact, automatic tuners are not being employed to any extent on home sets being currently sold?

A. No, I don't think that is true. I have seen automatic tuners, push buttons, on large numbers of them as I have passed them in the windows and noticed them in the homes of my friends.

(Testimony of LeRoy J. Leishman.)

Q. What sets?

A. I have paid little attention to it, but I believe my brother has a Magnavox with it on.

Q. When was that?

A. That was one bought since the war.

Q. When, do you know?

A. About a year ago.

Q. You have told us as definitely as you can whether automatic tuners having adjustable tappets and rockers are now being equipped on home receivers that are being offered [261] for sale at this time?

A. I have answered your questions on that matter as well as I can, to my knowledge.

Q. Now, upon automobile radios, and I am referring to the current car manufacturers' radios, that is, the sets that the car manufacturers originally equipped their cars with—do you know whether or not the present Chrysler line of Plymouth, Dodge, DeSoto and Chrysler have tuners of the adjustable tappet and rocker type?

A. No, I don't know.

Q. Can you answer that question as to the Ford?

A. No, I am not familiar with what the Ford has.

Q. Can you answer that question as to the Packard?

A. No.

Q. Can you answer that question as to the Studebaker?

A. I can't answer it with respect to any automobile.

(Testimony of LeRoy J. Leishman.)

Q. You can't answer it with respect to the Nash?

A. No, I can't.

Q. Or the Hudson? A. Not any.

Q. Or the Kaiser-Fraser?

A. I can't answer with respect to that either.

Q. Can you answer as to whether any of those makes of cars that I have enumerated have ever been equipped by the [262] manufacturers with tuners of the type utilizing adjustable tappets and rockers?

A. I would have to go through that entire list again with that in mind. You asked me about the present production.

Q. I will read you the list again. Ford?

A. I can't state with any certainty, but I am quite sure that they did use them.

Q. I don't want any guessing about it. Packard?

A. Yes, Packard used them.

Q. When?

A. As near as I can tell, somewhere between '39 and the spring of '42.

Q. Not since?

A. I don't know what they have done since.

Q. Studebaker?

A. I am not at all familiar with what Studebaker has done along that line.

Q. Nash?

A. By the way, I can give you accurate information on some of this stuff if I could do it after referring to information that I have at home.

(Testimony of LeRoy J. Leishman.)

Q. We have to take your information as it is now.

A. I can't say definitely as to whether Nash used them or not.

Q. Hudson? [263]

A. I can give you no definite information on that.

Q. Kaiser-Frazier?

A. They didn't manufacture before the war.

Q. The answer is you don't know of them ever having used a tuner of the type I have stated?

A. I don't know whether they have or not.

Q. Are you prepared to state whether any of the tuners that are equipped by the car manufacturers that I have enumerated have ever used this feature of coaxiality which you are referring to?

A. Yes, a large number of them have.

Q. Which ones and when?

A. I can't tell you which ones, but I can answer the when generally. Before the war. All of the tuners involved in the Oklahoma case——

Q. I am not asking you about the Oklahoma case; I am asking you something about these particular car manufacturers, their factory equipment that comes with the car furnished by the car manufacturer, whether they ever, to your knowledge, these particular ones, used this feature of coaxiality that you have referred to.

A. A great many of them did.

Q. Which ones?

(Testimony of LeRoy J. Leishman.)

A. I can't tell you that information. I don't have it here. [264]

Q. Can you give the dates?

A. Previous to April, 1942.

Q. How long previous?

A. As far as I know right up to that time.

Q. Do you know?

A. The only information that I definitely have on that is the information in the Galvin Manufacturing catalog as to those that they manufactured and which manufacturers they made them for.

Q. Never mind telling me what is in the catalog. I am asking you if you know. Take the Studebaker, have they ever used a tuner having that feature? A. I have no idea.

Q. Take the Ford, have they ever in their factory equipment?

A. I can give no definite answer on that.

Q. Do you think Packard did sometime prior to 1942?

A. I think Packard did, and a good many of the others.

Q. Which ones?

A. I think I made it very clear that I can't give you that information here. I have the data at home.

Q. None of those car radios employed an adjustable tappet which was mounted on a member which was pivoted at a point like the point Q shown in your patent drawings, isn't that correct? [265]

(Testimony of LeRoy J. Leishman.)

A. I think that is correct.

Q. Have any of the tuners employing adjustable tappets and rockers and this feature of coaxiality that you have referred to ever been used with A.F.C., to your knowledge?

A. Not to my knowledge.

Q. Do you know they have not?

A. No, I don't know that it has never been done. I couldn't possibly know that.

Q. Can you give us the name of any home receiver manufacturer who is now equipping his radio tuners of the adjustable tappet and rocker type and using coaxiality?

A. I can't give you the name now, but I think all those that are using the tappet and rocker tuners would have the coaxial relationship.

Q. I am not asking you that; I am asking you if you know of any of them that are using it?

A. I am not familiar with what any manufacturer is doing along that line now.

Q. Do you know whether or not A.F.C. is being used with that type of tuner in any instance?

A. I don't know. I know that it wouldn't be necessary. In all cases with which I am familiar it was not used.

Q. Let's not have an argument, Mr. Leishman. I asked you a question and you said you didn't know, in answer [266] to my last question. How many patents dating back of 1937 do you know of which described automatic radio tuners utilizing adjustable tappets and rockers?

(Testimony of LeRoy J. Leishman.)

A. When you say "dating back," do you mean the filing date or the issuing date?

Q. Filing date first, and the issue date second.

A. There was the Marschalk patent. Did you say adjustable rockers and tappets?

Q. Adjustable tappets and rockers.

A. The only one with which I am familiar that issued in 1937 or before was the Marschalk tuner.

Q. Were there any tuners on the market prior to 1937 which used adjustable tappets and rockers?

A. No, there were not.

Q. At the time you applied for the patent application in 1934, in Figures 14 and 15 of which you showed the drawings which later became the drawings of the reissue patent in suit, you thought you were the first to design a tuner which had an adjustable tappet and rocker, did you not?

A. Yes, I did.

Q. And you found out later that that idea was anticipated by this Marschalk patent to which you have referred, is that correct?

A. I found that the idea of using an adjustable tappet on a rocker was anticipated by Marschalk.

Q. When did you find that out?

A. I found out that that part of the mechanism, rocker and tappet, had been used in the Marschalk device, when I received a communication from the Patent Office in connection with another of my patent applications in which the Marschalk device was cited as a reference. [268]

(Testimony of LeRoy J. Leishman.)

Q. And what was the date of the receipt of that communication?

A. That was sometime in October, 1937.

Q. Was the reason that you filed a disclaimer of claim 5, the disclaimer being set forth on the face of the copy of the reissue patent, which is here in evidence Exhibit A, being dated February 14, 1939, because of that showing in the Marschalk patent?

A. No. It was due to a letter that I received from Mr. Maxwell James, counsel for Radio Condenser Company and General Instrument Corporation.

Q. And have you got that letter?

A. I probably have that letter in my files.

Q. Will you bring it to court if you can?

A. If——

Q. I think there was a copy of that letter.

A. There may be some objection to it.

Q. (Continuing): In the case before Judge Harrison.

Mr. Flam: If your Honor please, I know what this is getting at. This letter addressed to Mr. Leishman by Mr. James is a letter in which Mr. James expresses the opinion that the patent isn't worth the paper it is written on. It is a sort of a way of getting the opinion of another attorney on a question of validity in here. I think that we should merely say that the only pertinent part of that letter [269] is that the letter does call attention to the Marschalk patent. I think that is true.

Q. (By Mr. Lyon): And was it because of the

(Testimony of LeRoy J. Leishman.)

reference in that letter to the Marschalk patent that you filed this disclaimer to which I have just called your attention?

A. It was because Mr. James said that if you substituted a spring for a weight in order to move the tappet out of engagement, that my claim 5 then with that change in the Marschalk device would read upon the Marschalk structure. In other words, he said that a spring and a weight would be an equivalent for moving the tappet up, just as we contend the lever and plunger are equivalents for moving it down.

Mr. Lyon: I think we ought to have Mr. James' letter here, and I am not relying on it for his opinion at all as an influence on the court; I am just relying on it because the witness has said that it was because of that letter that he filed this disclaimer.

The Court: Isn't the letter in the record which you have here? I am not going to postpone the case to get a letter that is in the record here already.

The Witness: I may have a photostat of it here somewhere.

Mr. Lyon: If you can produce it.

The Witness: I will see if I have it.

The Court: A conclusion of a lawyer representing an [270] adversary wouldn't carry much weight. If it has any relevancy, of course, it would be to show the attitude of the defendant here as

(Testimony of LeRoy J. Leishman.)

to why he disclaimed claim 5. That we will see. I don't care what the lawyer said about it, excepting a reference to that patent, because naturally the lawyer would put his best foot forward to say that his adversary had no claim at all. That is what results in a law suit.

The Witness: Here is the actual original letter. Let me see if this is it now, for sure. This is it.

Mr. Lyon: I offer the letter which has been produced by the witness as Plaintiff's Exhibit No. 1, for the limited purpose which the court has indicated.

The Court: Any objection to it?

Mr. Flam: Not if taken for that limited purpose, your Honor.

The Court: Yes. I have had too much experience with advocacy in lawyers' letters to take them as evidence, unless they come from the witness stand under oath, and then only when opinion evidence is of value to the court.

It will be received.

The Clerk: Plaintiff's Exhibit No. 1 in evidence.

(The letter referred to was marked Plaintiff's Exhibit No. 1, and was received in evidence.)

Q. (By Mr. Lyon): Mr. Leishman, I am going to read from [271] your testimony given before Judge Harrison as it appears beginning at the bottom of page 225 of the record in the Circuit Court

(Testimony of LeRoy J. Leishman.)
of Appeals, and ask you if you so testified before Judge Harrison. As indicated by the transcript this testimony was given in answer to questions propounded by Judge Harrison:

“Q. (By the Court): Mr. Leishman, what created a demand for these automatic tuners all of a sudden?

“A. I think, your Honor, that would be a very difficult question to answer. I don't think I could answer it. I know that after several years, in which as far as I know none were used, the telephone dial type appeared in 1936 and it appears to me that the reason they began to be used then was because there had been certain mechanical tuners in existence that the manufacturers had invented but they were not very accurate. And it was about that time circuits were developed that would electrically compensate for the mechanical inaccuracies of those tuners and then it was possible to use this telephone dial type of tuner that came onto the market then. And all of those sets——

“Q. Let me ask wasn't it the fact that they started to use radios in automobiles that created the real demand? [272]

“A. The first tuners that came out in 1936 of this telephone dial type were in household sets and I don't think that——

“Q. But when did they start to use radios in automobiles?

“A. The first that I saw were in, I think, 1929 but I am not sure how accurate that is.

(Testimony of LeRoy J. Leishman.)

“Q. It has only been during 1937, 1938 and 1939 that there has been any great use in that respect, is that not true?

“A. The automobile radios came in about 1929, and, as far as I know, the first automobile radios that were equipped with mechanical automatic tuning were the receivers of the Crosley Corporation. I don't believe that the other mechanical tuners, the so-called telephone dial type, were used in automobile sets but I am not sure of that at all. I never saw any.

“Q. Do you know whether it is not a fact that the real extensive use of radios in automobiles developed during the last two or three years, where it has become almost universal now to have a radio in your car?

“A. I don't believe I understand your question, your Honor. [273]

“The Court: Read the question. Maybe it is not intelligible.

“(Question read by the reporter.)

“A. I think that is true, your Honor.

“Q. Did that fact create a demand for an automatic tuner? Was there any relation between the two as far as you know?

“A. I don't think there was much of a relationship because the larger part of the automatic tuners, by far, used in household sets and the first ones that came out during this last era or trend

(Testimony of LeRoy J. Leishman.)

of the mechanical automatic tuning came in in 1936, were in household sets.

“Q. I notice some of the advertisements that you have called attention to in these magazines of the defendant’s sets lay stress upon the safety feature. And I was trying to find out whether or not this safety feature—in other words, you recognize and I recognize in driving a car if you are manually trying to find your station it is creating a hazard that would not be there if you had an automatic tuner?

“A. That is certainly correct, your Honor.

“Q. And whether or not the use of a radio in the automobile created a demand for a [274] tuning device that would eliminate the hazards of detracting the attention of drivers?

“A. Well, I think that that factor was responsible for the sale and use of a larger number of automatic tuners; but I don’t know whether that factor would be large enough to be an important factor in creating a demand.

“Q. All at once, here in the last two or three years developed automatic tuners and they are in almost universal use now, except by people like me who have a radio that I am still using that is ten years old, otherwise modern people would have an automatic tuner now.

“A. I think that they were developed originally and used mostly in household sets. But in line with your thinking along that line, your Honor, I think

(Testimony of LeRoy J. Leishman.)

that push button tuning has been responsible for the sale of large numbers of automobile receivers that would not have been sold otherwise; that it has greatly stimulated the automobile receiver business when it became possible for automobile owners to have a safe type of tuning rather than the other type that I have always thought was very hazardous.

“Q. I know, but I was just trying to [275] find out if you knew why it was that, in an industry that is an important industry like the radio industry, that has had a good many years of background and experience now, why it was that all of a sudden all of them started to use automatic tuners.

“A. Well, I think I can——

“Q. And, as you have shown here, there are different types like you, yourself, have made more than one type.

“A. I think I can answer that question, now that I have given it some thought, your Honor. The tuners that previously had been used in the radio industry were complicated or bulky or large like the Zenith device, that added \$15 to the retail price of some of the sets, or else they were of complicated electrical structure, and there have been some mechanical tuners designed, particularly this telephone dial type, but it was not possible to use them. The industry, I think, would have been glad to have used them but the automatic frequency control circuits were developed at that time by means of

(Testimony of LeRoy J. Leishman.)

which, if you got a receiver almost in tune, this circuit would pull it in tune. Some manufacturers referred to that type of tuning as magnetic tuning because it would pull it right in [276] tune. So with that circuit type available it was possible to use those previous mechanical tuners, that is, previous to the introduction of my principles, that were not particularly accurate. They would get almost in tune and then the circuit would pull it into tune.

“Q. In other words, the developments in the radio industry made it feasible to use an automatic tuner that they could not use before?”

“A. That is it, your Honor.

“The Court: That is all.”

Did you so testify?

Mr. Lyon: At the recess I will hand the record to the reporter so that there can be no mistake in copying the testimony.

Mr. Flam: I object to that question. It doesn't seem to be in the nature of impeachment of any testimony that the witness has offered here before. It is not proper cross-examination.

Mr. Lyon: It wouldn't be impeachment, your Honor, unless the witness denied giving the testimony, and then I would have to prove it. But it is an admission by the witness in another action on the very matters testified to here. I believe I am entitled, as this is the party in the action, to present any material and relevant statement that he

(Testimony of LeRoy J. Leishman.)

has [277] anywhere, that he will admit having made anywhere, which bears on the issues of this case.

The Court: Of course we have the situation here that is unique on account of the attitude of the Circuit Court of Appeals in that appeal. As I stated yesterday, or perhaps the day before yesterday, whatever lurks in that record it seems to me was before the Circuit Court of Appeals, and even though that court in exercising its authority on appeal saw fit to eliminate certain features of the case that were in the record, it lurked in the record, they are in the record of that case and presumably they were before the Circuit Court of Appeals in that case, so that the problem here is only proper, in my judgment, because of a claim that before this court there has been an amplification, an extension, an addition to the record which was made in the case that was appealed from Judge Harrison's division of this court to the Circuit Court of Appeals of the Ninth Circuit. It is proper, therefore, for this court to know what was in the record before the Circuit Court of Appeals of the Ninth Circuit in the case that was appealed from Judge Harrison's division of this court.

Objection overruled.

Mr. Lyon: I believe Mr. Flam overlooked offering in evidence the Marschalk patent.

The Court: I think it is in evidence. [278]

The Clerk: The model is Exhibit E in evidence.

Mr. Lyon: I don't find in the record where

(Testimony of LeRoy J. Leishman.)

there was any offering of the patent itself. It was talked about a lot.

The Court: Is it Marschalk 2,072,897?

Mr. Lyon: That is correct. Exhibit E is the model.

The Court: It was referred to, and I think there were marks made on one of these figures.

The Witness: A good deal, yes.

Mr. Lyon: Could it be given, say, the number E-1 so that it will be tied to the model?

Mr. Flam: I think it was.

The Court: Apparently it was not marked. Let's see if it is in the transcript. I haven't looked at the transcript to see if it was or not.

It does no harm to mark it again, because it should be in the record.

Mr. Flam: I have no objection to your offering it in evidence.

Mr. Lyon: I am perfectly willing to offer it if you prefer. I thought it was offered at the time it was being talked about.

Mr. Flam: It doesn't matter. I can offer it in evidence and request that it be marked with a sub-number to the letter assigned to the Marschalk model. I believe it is [279] Exhibit E. We can have it numbered E-1.

The Court: Yes, it was offered on page 29 of the record, line 21, the defendant's Exhibit E in evidence. Well, that refers to the model here.

On page 26 of the record a document is referred

(Testimony of LeRoy J. Leishman.)

to as Defendant's Exhibit E for identification; on page 29 of the record the Exhibit E is offered and received in evidence, and the parenthetical statement here is that it is the model.

Mr. Flam: If your Honor would agree, I think we can simply have the patent designated as Exhibit E-1 in evidence.

The Court: So ordered.

Mr. Lyon: That is satisfactory.

(The document referred to was marked Defendant's Exhibit E-1, and was received in evidence.)

Q. (By Mr. Lyon): Mr. Leishman, you didn't answer my question. Did you testify in accordance with my previous question before Judge Harrison?

A. Yes, I gave that testimony; and I gave substantially the same testimony yesterday, and it is all correct.

Mr. Lyon: I will move to strike the volunteered statement as to whether or not what he gave yesterday was to the same effect, your Honor.

The Court: Yes, that will go out.

Q. (By Mr. Lyon): Mr. Leishman, was the Crosley Corporation [280], the first to bring out to the trade a push-button automobile radio set?

A. Using the straight-in push, do you mean?

Q. Yes.

A. I think it was.

Q. And that was introduced either in January or February, 1937, is that correct?

(Testimony of LeRoy J. Leishman.)

A. '38.

Q. '38? A. That is correct.

Q. Did you upon learning of that device serve a notice of infringement on the Crosley Corporation charging infringement of your original patent Exhibit Q in this case? A. Yes, I did.

Q. What was the date of that notice, if you remember, or approximate date?

A. It would probably have been some time in February, 1938. It was very shortly after the issuance of the patent, of the original patent, of which the patent here in suit is a reissue.

Q. Was that charge of infringement based on the manufacture and sale by the Crosley Company of tuners like Exhibit BB in this case?

A. Yes, it was.

Q. Following the sending of that notice of infringement [281] to the Crosley Corporation, did you have a meeting in Cincinnati with the firm of Allen & Allen, patent lawyers representing the Crosley Radio Corporation?

A. Yes, I did.

Q. At that meeting did the firm of Allen & Allen deny that the Crosley tuner like Exhibit BB infringed your original patent Exhibit Q in this case? A. Yes, they did.

Q. As a result of that interview did you decide to apply for a reissue of your patent Exhibit Q in this case, so as to cover the Crosley device like Exhibit BB? A. No.

(Testimony of LeRoy J. Leishman.)

Q. Was one of your purposes in applying for the reissue patent in suit to so modify the language of the claims of your original patent that you could eliminate the question of non-infringement which was asserted by Allen & Allen at the meeting that I have just referred to? A. No.

Q. I am going to read to you commencing at page 125 of the record before the Circuit Court of Appeals in the Associated case, and ask you if you gave the following testimony with reference to the same matter that I have just interrogated you about:

“Q. Did not the representatives of the Crosley Company at that meeting and [282] Mr. Yungblut contend that the Crosley tuner did not infringe the claim because of the limitation which they pointed out and urged should be construed to be in the claim?

“A. Yes; that is true.

“Q. So you knew before you applied for your reissue that the Crosley Corporation was contending that the reference in the original Claim 5 to means movable about a pivot referred to the lever that was movable about the pivot Q and contended that the claim should be so construed and, therefore, it was not infringed by the Crosley tuner? You knew that, did you not?

“A. That is a rather long question. May I ask to have it repeated?

“Mr. L. S. Lyon: Read it to the witness, please.

(Testimony of LeRoy J. Leishman.)

“(Question read by the reporter.)

“A. Yes; I knew that was their contention and position.

“Q. Isn't it a fact, aside from any intention you had of narrowing the new claims that you added by the reissue application, that one of the purposes of the reissue, one of your purposes, was to so modify the language in this [283] discussion with the Crosley representatives about it of Claim 5 that you could eliminate that question of non-infringement?

“A. I think I can say yes to that question.

“Q. Isn't that the reason that in Claim 7 you did modify that language? We will now look at this comparative analysis chart that I have here of the claims. You will notice that Claim 5, element No. 2 of Claim 5, reads 'means movable about a pivot' and in Claim 7 that language is changed to read 'means adjustably movable about a pivot.' The purpose of that was to direct that element of the claim to the tappet as distinguished from the pivot Q, isn't that correct?

“A. I would say that substantially that is correct. * * *”

Did you so testify?

A. Yes, that is correct.

Mr. Lyon: I will ask the reporter to use this printed transcript.

Q. (By Mr. Lyon): Can you produce Plain-

(Testimony of LeRoy J. Leishman.)

tiff's Exhibit 25 in the Associated Wholesale Electric case?

A. What was that exhibit?

Q. That was referred to at page 253 of the transcript in that case and is the model you used before Judge Harrison to illustrate the Marschalk device. [284]

A. That model is an exhibit in Oklahoma, but we have a duplicate of it here.

Q. Do you have a duplicate of it here?

A. I think that one that we have been using here is just the same as the one we had in that case.

Mr. Lyon: Will you let me have Exhibit E, Mr. Clerk, please?

(The exhibit was handed to counsel.)

Q. (By Mr. Lyon): Did not Exhibit 25, your Exhibit 25 in the case before Judge Harrison, differ from this Exhibit E in this case by including the gang condenser No. 29 and the multiplying segment No. 32 shown in Figure 13 of the Marschalk patent Exhibit E-1?

A. No, there was no condenser of any kind attached to that exhibit in the Crosley case.

Q. You are sure of that?

A. I am positive of that.

Q. Would the presence of such a gang condenser and multiplying segment tend to restrain movement of the rocker during the setting of the tappet?

A. Slightly.

(Testimony of LeRoy J. Leishman.)

Q. In Exhibit No. E, which you demonstrated to the court, the rocker is free to rotate with practically no friction, in other words, it can be described as practically floating, is that correct? [285]

A. I don't think it can be described as floating. However, it is very free to move as they need to be in these automatic tuners.

Q. If the rocker was free to rotate in the way that the rocker in Exhibit E is free to rotate, what would happen to the tuner in an automobile set if the plungers had been pulled away from the rocker so that they were not in contact with the rocker, and the automobile went over a bump or a road that caused the automobile to vibrate?

A. It would be de-tuned unless there was some kind of a brake applied, as they always do on these automatic tuners, including those of the plaintiff.

Q. Is there any automatic brake shown on Exhibit E?

A. No; but at the time that the difficulty arises in that tuner the brake is always taken off, as in the plaintiff's tuners.

Q. At the time the car is going over the road?

A. No; at the time that the setting takes place, the brake is always removed.

Q. Are you sure of that in connection with the plaintiff's accused tuners? A. Yes.

Q. What do you base that on?

A. I can show you on the tuners.

Q. You can show how to take the brake off?

(Testimony of LeRoy J. Leishman.)

A. I will show you as soon as you press the button the first thing that happens is that the load is taken off so that the rocker is free to move.

Q. Was there any brake on the Crosley tuner?

A. I don't believe that there was on the Crosley tuner. I am not certain about that. I don't remember there being any brake on it.

Q. I thought you said they always have brakes on these automatic tuners?

A. In recent years they put them on because it is very desirable. I know that was discussed when these tuners were first considered for automobiles it would be necessary to put on some kind of brake that would be immediately removed.

Q. Will you repeat for the court the demonstration that you made on your direct examination, it will only take a minute and I want to get it back in the court's mind, of how the Marschalk device would be set, and how you would make a test during the setting of coaxiality on this model Exhibit E.

A. Do you want me to adjust it, you say?

Q. You made a demonstration to the court of how to set this Exhibit E and how during the setting to determine whether or not there was coaxiality.

A. During the setting you don't have any occasion to [287] determine whether there is coaxiality; you merely press down on the tappet, press down on the manually operable member——

Q. Excuse me. Instead of using the word "set-

(Testimony of LeRoy J. Leishman.)

ting," I should have said during the adjustment of the tappet.

A. During the adjustment of the tappet you have no occasion to make any test of coaxiality. The instrument is built in a certain way, and during the setting you merely press down on the manually operable member, so that the tappet will take the angular position of the rocker, and then you tighten the tappet in the position to which it has been adjusted.

Q. I think you misunderstood me, Mr. Leishman. You made a test of this device, Exhibit E, which you said demonstrated whether or not the device was coaxial.

A. I don't remember having done that. Do you mean yesterday in the demonstration of this?

Q. Yesterday or the day before.

A. I have no remembrance of that. You can look at it and see that it isn't coaxial.

Q. Did you not state in your demonstration for the court that the test for coaxiality that should be applied was that you should adjust the tappet and then press the plunger and see whether the plunger moved the rocker?

A. I don't remember ever making any such remark.

Q. What is the test for coaxiality that you testified [288] and demonstrated to the court.

A. The only test that we have had here at all, or any demonstration with respect to it, was the

(Testimony of LeRoy J. Leishman.)

model that we had in which it was obvious upon visual inspection that the tappet was coaxial with the rocker.

The Court: Take the transcript on page 26, Mr. Lyon, in connection with that.

Q. (By Mr. Lyon): Referring to page 27, the demonstration that you made, pages 27 and 28.

The Court: Do you have the copy of the transcript?

The Witness: Yes. I haven't read it yet. I haven't had an opportunity to. I don't have it here.

(The transcript was handed to the witness by the court.)

Q. (By Mr. Lyon): Will you read that over?

A. Is it on page 27?

Q. Page 27 and 28.

A. There is nothing said there about any test of coaxiality.

Q. Will you repeat the demonstration which you made, which is referred to on pages 27 and 28 of the record?

A. Do you want me to read it and then perform the operations? Or shall I do it by memory?

Q. Just repeat the demonstration and state what you are doing, describe what you are doing for the purpose of the record. [289]

A. To set the tappet you first adjust the rocker to the angular position required for a given station, in other words, you tune in the station, then you press down on the manually operable member so

(Testimony of LeRoy J. Leishman.)

that the rocker will assume the angular position of the tappet. And I tried that with the rocker perfectly straight, and then when I pressed the tappet into an engagement of the rocker there was very little rotation of the rocker. And then I put the rocker at a tilt, at an extreme angular position, and brought the tappet down into engagement with it and the rocker flipped around, and then I tilted it, as I remember, in the opposite direction and brought the tappet down into engagement with the rocker and the rocker flipped around.

Q. You referred, did you not, to the fact that after setting the tappet then releasing the lever, that if the lever was brought back to engage the tappet there was a movement as shown by the pointer of the rocker? A. That is right.

Q. And you stated that that movement was because the center of the axis of the tappet and the axis of the rocker were not coaxial?

A. I don't remember that I said that at all in the initial arrangement. Later on after I discussed this tuner and several others, I showed how the difficulty could be [290] solved by making the tappet coaxial with the rocker.

Q. You stated, did you not, that that was a test for coaxiality? A. No, I did not.

Q. Is it?

A. Well, we know now as a result of making this tuner, that when the device is coaxial, when the

(Testimony of LeRoy J. Leishman.)

tappet is coaxial with the rocker, that that does not occur.

Q. Suppose you wanted to test a tuner to see whether or not the axis of the tappet and the axis of the rocker were on center, would that be the way you would recommend testing it?

A. If I were going to do it now, that would be one——

Q. Can you answer that yes or no?

A. That would be the way I would test it now having made this invention.

Q. That is not the test that you stated to Judge Harrison should be applied? I am correct in that, am I not?

A. I think there is no discrepancy here at all, as I remember it. I think I told——

Q. Do you remember a test for coaxiality in which the lever tappet is maintained in contact with the rocker, after the tappet has been adjusted and the rocker is rotated, and you applied your finger to the lever, or thumb member on the plunger to see if there was any movement [291] or walking of that member? Do you remember that test?

A. I remember that test very well.

Q. Isn't that the test that you applied before Judge Harrison and testified was the correct test for coaxiality?

A. I told him in testing tuners of the coaxial rocker and tappet type, that you could find out whether they were coaxial, whether the tappet and rocker was coaxial with the axis of the tappet——

(Testimony of LeRoy J. Leishman.)

maybe I better start that again—by pressing down upon the manually operable member, and if they were not coaxial in tuners of this type, that the manually operable member would move.

Q. In January, 1939, didn't you issue a written statement to the radio and television manufacturers telling them how to test tuners to determine whether they had your feature of coaxiality or not?

A. Yes, I did; and that was the test I recommended.

Q. Which test,—the one you have demonstrated to Judge McCormick or the one you demonstrated to Judge Harrison?

A. The test I demonstrated to Judge Harrison.

Q. If you applied the test that you demonstrated to Judge Harrison to the device of the Schaffer patent, specimens of which are here in evidence as Exhibits H and I, is there any movement of the thumb piece on the lever? [292]

A. You can't apply that test to the Schaffer mechanism.

Q. I didn't ask you that. If you apply the test of keeping the tappet in contact with the racks, and moving the racks, will there be movement of the thumb piece on the lever of the Schaffer device?

A. There won't be. But that isn't the test that I recommended. I recommended that test—

Q. The difference is in the test that you recommend you say "move a rocker"—well, the rocker is replaced in the Schaffer device by racks, and you

(Testimony of LeRoy J. Leishman.)

move the racks, that is the sole difference in the test, isn't it?

A. Well, that is the difference in the device to which the test was applied. ..

Q. I am not asking you to argue the case. That is the sole difference, isn't it?

A. That is not the difference in the test; that is the difference in the device that you apply the test to.

The Court: We will recess until 2:00 o'clock.

(Whereupon, at 12:00 o'clock noon, a recess was taken until 2:00 o'clock p.m., of the same day.)

Thursday, May 27, 1948—2:00 P.M.

The Court: Proceed, gentlemen.

Mr. Flam: Will you take the stand again, Mr. Leishman?

- LeROY J. LEISHMAN

called as a witness by and on behalf of the defendant, having been first duly sworn, resumed the stand and testified further as follows:

Cross-Examination

(Continued)

By Mr. Lyon:

Q. I will ask Mr. Leishman if he can recognize——

Mr. Flam: Pardon me, Mr. Lyon. If your Honor please, I think just before the recess this

(Testimony of LeRoy J. Leishman.)

witness was asked regarding certain tests for coaxiality. I think the best evidence as to what tests were suggested would be the letter that Mr. Leonard Lyon referred to. I would like to have it introduced in evidence if there is such a letter.

Mr. Lyon: I will ask Mr. Leishman if he recognizes this letter as the letter he addressed to Radio & Television Manufacturers, addressed to the Radio Industry re patent infringement, April 28, 1939, and in which he explained how to test one of these tuners to determine whether or not it embodied the feature that he was complaining of.

(Handing object to the witness.)

The Witness: This apparently is not a photographic [294] copy so I will have to read it to see if it is true with respect to this matter.

The Court: I don't want to take up time unnecessarily. It is either or is not a photostat. If counsel says it is I am willing to take his word for it.

Mr. Lyon: I am sure, your Honor, that I don't know how I got that copy. I have had it for years.

The Court: Well, we won't take up our time here by letting people read documents. Photostats can be produced which will save our time immeasurably.

Mr. Flam: I thought possibly Mr. Leishman would recognize it if it is his.

The Court: Apparently he doesn't. He said he has to read it.

(Testimony of LeRoy J. Leishman.)

The Witness: I just need to read one more paragraph. Yes, this is. I am willing to accept this as a true copy and notice that I sent to the radio industry explaining how to test tuners containing a rotatable rocker and an adjustable tappet to see whether the rotational axis of the tappet was coaxial with the rotational axis of the rocker.

Mr. Lyon: I will offer the notice which the witness has just identified as Defendant's Exhibit B.

The Clerk: That should be Plaintiff's Exhibit 2.

The Court: So ordered.

(The document referred to was marked Plaintiff's Exhibit 2, and was received in evidence.)

Q. (By Mr. Lyon): Now, will you take Defendant's Exhibit M and demonstrate the tests as set forth in that letter on this exhibit?

A. Yes. As explained in that letter, if you desire to determine whether the tappet is coaxial with the rotatable rocker you push the loosened tappet into engagement with the rotatable rocker and then while holding it in engagement you rotate the rocker and if, while you are turning the rocker with which the tappet is engaged, the button does not move up and down that is the test which I discovered would determine whether or not they were coaxial, and I prescribed that test to the industry to make on radio receivers containing tuners with a rotatable rocker.

Q. Now, will you perform a similar test on the Zenith model, Exhibit J, in which——

(Testimony of LeRoy J. Leishman.)

The Clerk: That is Exhibit I, Mr. Lyon.

Mr. Lyon: Exhibit I, excuse me. In which you adjusted the tappet in a similar way and then move the shaft by taking hold of the universal joint and hold your finger on the button, and state whether or not there is any movement of the button in that model.

The Witness: Your Honor, that test was one to apply to a tappet.

Q. (By Mr. Lyon): I am not asking the witness to argue the question. I am asking him to make the test. [296]

Mr. Flam: I will make the objection because the test prescribed by the witness as set forth by the letter, relates only to rotatable rockers and adjustable tappets and this device doesn't have a rotatable rocker at all.

Mr. Lyon: Your Honor, you see as the shaft is being turned it is operated by two opposite little moving racks instead of by a rocker, but we contend that the racks and the rocker are mechanical equivalents and I think we are entitled to have a demonstration.

The Court: I wish you would put that in front of the witness instead of in front of the bench.

Mr. Lyon: Excuse me.

The Court: The question merely calls for the actuating of this exhibit. It doesn't call for anything else and you may answer the question.

The Witness: I have loosened the tappet. It is

(Testimony of LeRoy J. Leishman.)

still pretty tight. I guess that is as free as we can make it. I have loosened it but I am unable to rotate the rocker to see if its rotational axis is in line.

Q. (By Mr. Lyon): I didn't say a thing about a rocker. I asked you to rotate the shaft by means of taking hold of this universal joint that is on the model.

A. I will be glad to agree that if you move the elevators or rectilinear movable members in this device and hold the button down so that the tappet engages these devices [297] that move up and down, the bars connecting the racks, that there is no up and down movement of the button.

Q. And is not this Zenith tuner of the Schaefer patent, which is illustrated here by Exhibit I, capable of positioning the shaft, 9, as shown in the Schaefer patent just as accurately as the structure shown in the drawing of your patent are capable of positioning the shaft? A. No.

Q. Shaft S? A. No.

Q. What is the difference?

A. You have to transmit the motion through, as we demonstrated yesterday, ten different movable parts, and the more parts you have to transmit motion through the more chance of inaccuracy creeps in.

Q. That Zenith device by use of the racks in lieu of a rocker embodies a multiplying system, does it not? A. I wouldn't say so.

Q. There is not a multiplying system in the Zenith rocker?

(Testimony of LeRoy J. Leishman.)

A. Nothing that I would call a multiplying system, no.

Q. What?

A. No, there is nothing in there that I would call a multiplying system. [298]

Q. Do you have to have a multiplying system with the device shown in the drawings of your patent? A. Yes.

Q. Is that multiplying system shown in your patent? A. No.

Q. Does there have to be a multiplying system added to the structure shown in the Zenith patent?

A. No.

Q. Or the Schaefer patent?

A. No. I would like to qualify one of the answers to one question that you asked me. You asked me if there had to be a multiplying device added to my device to use it with a radio set. That depends entirely upon the angular rotation required of the condenser or the type of movement needed for impedance bearing device in the tuning mechanism. If the condenser moves only a relative small amount as in some of the models we had here yesterday, no motion multiplying means is required. If you used it in connection with permeability tuning such as those in evidence, no motion multiplying means is required. But if you have to have a rotation of the shaft of a greater number of degrees than the number of degrees of rotation of the rocker, then it would be necessary to employ motion multiplying means such as gears.

(Testimony of LeRoy J. Leishman.)

Q. How many degrees of rotation must be provided for [299] in the case of condenser in order to scan the entire broadcast band.

A. You can do it in about sixty degrees with such a tuner here in evidence.

Q. And without any multiplying mechanism?

A. Yes.

Q. Now, have you ever determined precisely how many degrees of rotation the rocker, 48, is capable of in the device shown—in a device constructed as shown in your patent drawings of the re-issue patent in suit where it is accompanied with the other rocker, 54?

A. No. I have never measured the exact number of degrees because——

Q. I don't care about why you haven't if you haven't. A. All right.

Q. Well, now, in the Zenith device of which Exhibit I is a model and which is built under the Schaefer patent, does that device embody any mechanism which multiplies the number of degrees that the shaft is turned by the racks?

A. That is accomplished by the relative size of the gear with which the racks mesh. What you would call motion multiplying there is determined by the size of that gear. If you had a large gear it would rotate through a smaller angular arc but by using the relatively small gear you can obtain a movement of 180 degrees and the tuner is so arranged. [300]

(Testimony of LeRoy J. Leishman.)

Q. Now in the tuners made by the Crowe Electric Company to which you have referred—the Crowe Name-Plate Company, did they have multiplying mechanism of some kind added to them?

A. You mean as sold by Crowe?

Q. Yes, installed for use in a car.

A. In some cases they did. Whether they did in all cases, I don't know.

Q. In those cases that you know of where they did will you tell us what kind of a multiplying mechanism was employed?

A. Two different kinds with which I am familiar. In one case a small wheel, or a wheel rather. A pulley would be attached to the shaft and connected to the rocker and another pulley would be connected to the condenser and a string or cord or cable would be wrapped around these two pulleys and the pulleys would have such a ratio in diameter that when if used with 180-degree condensers when the rocker turned through an arc of 60 degrees that that motion will be multiplied by the pulley system so the condenser would turn 180 degrees. And on other sets there would be a gear or at least a gear segment which would be part of a gear, attached to the rocker and two gears or what is called a split gear would be attached to the condenser with a little spring between them to take out any play between the [301] teeth, and when the teeth are properly shaped and the springs have the right tension it is possible, when the rocker turns, for that motion to be trans-

(Testimony of LeRoy J. Leishman.)

mitted through those gears to the condenser without any appreciable loss or inaccuracy.

Q. Now, how many parts made up that extra mechanism which was used as you have stated on the tuners made by the Crowe Name-Plate Company?

A. Three. Three if you use the pulley. It would be the pulley system—two pulleys and the third part would be the cord and if you used the gearing arrangement there would be one gear and then the two parts of the split gear and then a very small spring.

Mr. Lyon: I will ask that the tuner which I am about to show to the witness be marked for identification as Plaintiff's Exhibit No. 3 for identification.

The Court: It may be so marked.

(The article referred to was marked as Plaintiff's Exhibit No. 3, for identification.)

Q. (By Mr. Lyon): I show you a tuner which I am informed was equipped by General Motors on various of its models and ask you if you have ever seen that tuner before or one like it?

A. No, I never have.

Q. Can you recognize that in lieu of a rocker that tuner employs a rack member, rack members somewhat like those [302] in the Zenith model, Exhibits H and I?

A. Yes, there is quite a resemblance.

Q. You have no knowledge whatever of such a

(Testimony of LeRoy J. Leishman.)

tuner ever having been used by the General Motors Corporation?

A. The only knowledge that I have of General Motors using such a tuner was by statements that were contained in the transcript of depositions taken in Kokomo, Indiana, in an interference to which I was a party, and some reference was made to this tuner in the answers to the interrogatories. It was stated that this tuner wasn't made——

Q. Have you any opinion as to whether or not the tuner that you have in front of you, Plaintiff's Exhibit 3 for identification, is capable of positioning the condenser shaft with sufficient accuracy or satisfactory use in an automobile radio?

Mr. Flam: If your Honor please, I think as long as the witness said he has never seen a tuner like this before it might require an inspection by him to make the proper answer to that question.

The Court: Well, he will say that if he thinks it.

The Witness: I can't say whether it would or not. I can give my reasons why if you are interested in them.

Q. (By Mr. Lyon): Well, I am not very much interested in your reasons if you can't say one way or the other.

Now, will you take Exhibit E in this case and perform for the court here the same demonstration that you made to Judge Harrison in the Associated case with Plaintiff's Exhibit 25 in that case, which you contended showed that it was difficult to set

(Testimony of LeRoy J. Leishman.)

or adjust such a device which Judge Harrison, as shown by the record in the Associated case at page 254, then performed himself and stated in the record as follows—I think I have the wrong page. If I may just check my notes for a moment to be sure. I have the quotation but not the page number:

“The court has tried the instrument and the witness’ testimony does not add anything to what the court has already ascertained from an examination and an effort on its part to work the mechanical device. I had no difficulty in setting the device at the extreme end, but it is true that a person has to use a greater amount of care. That was the result of the court’s own experiment with the instrument.”

Do you have the question in mind?

A. Yes, I do.

Q. I want you to repeat with Exhibit E the demonstration that you made before Judge Harrison and which he then repeated himself and then made this observation which I have read from the record in the Associated case.

A. Judge Harrison turned the rocker to one end of the [304] scale or the other, so it was tilted to an extreme angular position.

The Court: Just a moment. You may proceed.

The Witness: Judge Harrison tilted the rocker to an extreme angular position at one end or other of the dial and then he brought the tappet into engagement with it. Of course the tappet may be

(Testimony of LeRoy J. Leishman.)

in any position within its limited rotation. He brought it down into engagement with it and you have to keep that in the angular position and then he was able to set this at the angular position without it moving, but he said he had to use a great deal of care.

Q. (By Mr. Lyon): Mr. Leishman, referring to your Exhibit N, when the tappet is carried by a lever which is fulcrumed at a center such as the point Q as shown in the patent drawings of the re-issue patent in suit, it is unnecessary to provide any guides or sliding guides for positioning the tappet, is it not?

A. The fulcrum Q acts as a guide so you don't have to provide any additional guides or slides.

Q. Is the fulcrum Q a sliding guide?

A. Well——

Q. Can you answer that?

A. The hub slides around the shaft.

Q. But is it a bearing?

A. Yes, it is a bearing. [305]

Q. But it is a pivot?

A. It is a pivoted bearing or rotational bearing.

Q. Now, if you have the tappet carried by a plunger which has no pivot it is necessary to provide sliding guides, is it not?

A. Yes, that is correct.

Q. Referring to your exhibit MM and the General Motors tuner of the type which is Exhibit 1 to the complaint in this case, does that tuner have

(Testimony of LeRoy J. Leishman.)

the tappet carried by a lever which is pivoted?

A. No.

Q. Does that tuner require the presence of sliding guides? A. Yes.

Mr. Lyon: That is all, your Honor.

Redirect Examination

By Mr. Flam:

Q. I think you were asked on cross-examination regarding some correspondence with Mr. James of James & Franklin. Can you produce the letter or a copy of the letter that you wrote to James & Franklin about this subject of the desirability of disclaiming Claim 5 from the patent?

A. Yes, I have it.

Mr. Flam: Your Honor, I offer the carbon copy of the letter in evidence, dated January 14, 1939, and addressed [306] to James & Franklin.

The Court: It will be received and marked filed.

The Clerk: Defendant's Exhibit WW in evidence.

(The document referred to was marked Defendant's Exhibit WW, and was received in evidence.)

Q. (By Mr. Flam): Now, I think you further said that this Marschalk patent, which is the subject of the communications between you and James & Franklin, was cited in an office action. Do you have the office action in which that patent was cited? A. Yes, I do.

(Testimony of LeRoy J. Leishman.)

Mr. Flam: I offer in evidence the copy of the office action dated October 5, 1937, in an application, serial No. 149442.

The Court: It will be received and marked filed.

The Clerk: Defendant's Exhibit XX in evidence.

(The document referred to was marked Defendant's Exhibit XX, and was received in evidence.)

Q. (By Mr. Flam): Did this application referred to in Exhibit XX mature as a patent, do you know?

A. I don't remember. I think it has but I don't remember whether it has or not.

Q. That application has no relation to the patent here in suit, does it?

A. No, none whatever. [307]

* * *

Q. (By Mr. Flam): I show you Defendant's Exhibit Q in evidence, which is the original of the patent which was reissued and is now in suit. Did you consider that that patent, 2108538, of which Exhibit A is a reissue, was infringed by the Crosley Corporation? A. I did.

Q. Did the interview with the Crosley attorneys in [309] March of 1938 in any way change your opinion that they had infringed that patent?

A. No, they did not.

Mr. Lyon: I think that is incompetent, your Honor, what he did about the reissued patent.

(Testimony of LeRoy J. Leishman.)

Mr. Flam: Then I move to strike all that was adduced on cross-examination.

The Court: The objection is overruled. I think it is proper.

Mr. Flam: Did he answer the question?

(Answer read.)

Q. (By Mr. Flam): Did the conference with the Crosley attorneys in March of 1938 have any bearing at all upon your desire to apply for a re-issue? A. Yes, it did.

Q. What?

A. I decided that one reason that would make it desirable to apply for a reissue would be to have claims that wouldn't be capable of the misconstruction that had been placed upon them in the interviews with the Crosley attorneys.

Q. What opportunities have you had to find out what type of sets are now on the market, either for home radio receiver sets or for automobiles?

A. I haven't had any.

Q. Why? [310]

A. Because my time in the daytime has been fully occupied with the design and manufacture of X-ray equipment and my evenings and Saturdays and Sundays have been taken up with patent matters and with the carrying on the legal side of the Radio Condenser and General Instrument Company suit and matters pertaining to these suits. All of the time I am away from the Stereo-Fluoroscope Corporation has been occupied with this litigation.

(Testimony of LeRoy J. Leishman.)

Q. How long has that degree of busyness been in effect?

A. Well, that has been going on for more than three years.

Q. Have you done any shopping for autos or radio sets in the past few years?

A. No, none whatever.

Mr. Flam: That is all.

The Court: I want to ask one question along that line.

Mr. Lyon: No further questions.

The Court: To clarify in my own mind a matter in this case that is now before the court.

Mr. Leishman, originally you appeared in propria persona—that is, you appeared for yourself without an attorney.

The Witness: That is right.

The Court: And you presented a number of proceedings [311] before courts in this district—in the division of this court in which Judge Yankwich sits, did you not?

The Witness: That is correct.

The Court: And then later on you got the assistance of Mr. Flam?

The Witness: That is correct.

The Court: That is all.

Mr. Lyon: I have no questions, your Honor.

Mr. Flam: If your Honor please, the plaintiff rests, but I would—the defendant rests—but I would like to reserve the privilege of introducing in evidence certain other matters as to which, probably,

(Testimony of LeRoy J. Leishman.)

a stipulation has been entered into, before the end of the trial. I think I can probably formulate them tonight and introduce them tomorrow.

I notice also that the two exhibits exemplified by Exhibits H and I have not been formally offered in evidence. I think they are merely marked for identification. In any event, I offer them now.

The defendant also offers in evidence the answers to plaintiff's interrogatories that are on file in the case now. I am not offering in evidence the interrogatories because these answers are formally set forth in the interrogatories and they may be taken as a complete record of both the interrogatories and the answers. [312]

The Court: It is so ordered and so received.

Mr. Lyon: Need those be given a separate exhibit number or copied into the record as part of the testimony, or may they just be——

The Court: I don't think it is necessary to copy them into the record now. They are here in pretty good typewritten form. I have observed them in the file.

Mr. Clerk, counsel had better indicate to you the ones he wants and they may be marked as exhibits in this case.

Do you have a question, Mr. Lyon?

Mr. Lyon: I have no questions.

The Clerk: Exhibits H and I are admitted in evidence, your Honor?

The Court: Yes.

(The models referred to were marked Defendant's Exhibit H and I and were received in evidence.)

The Clerk: And Defendant's Exhibit YY are plaintiff's answers to defendant's interrogatories filed May 15th, 1948.

Mr. Lyon: Mr. Schwarz.

(The documents referred to were marked Defendant's Exhibit YY, and were received in evidence.) [313]

No. 12485

United States
Court of Appeals
for the Ninth Circuit.

LeROY J. LEISHMAN,

Appellant.

vs.

GENERAL MOTORS CORPORATION,

Appellee.

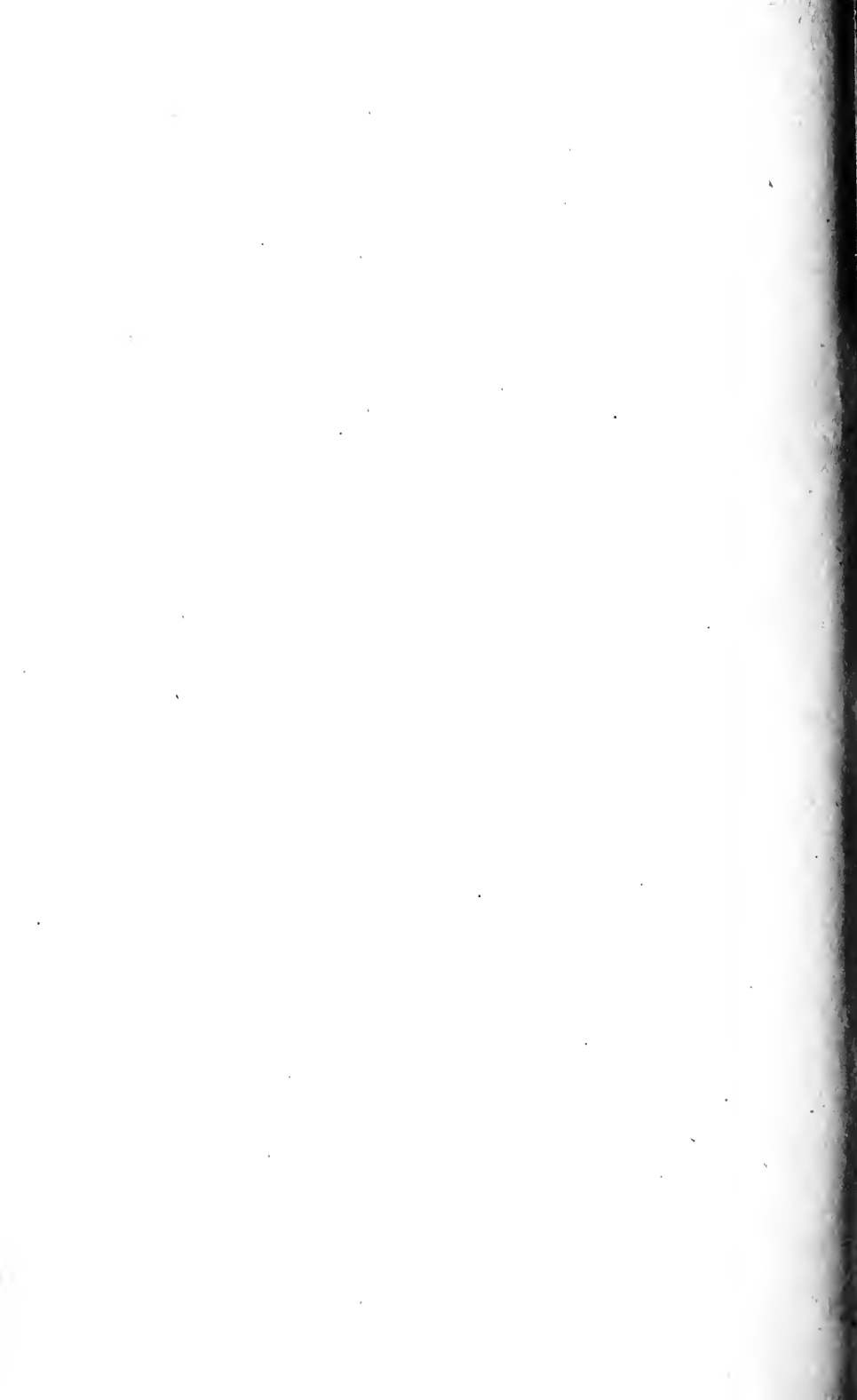
Transcript of Record
In Four Volumes
Volume II
(Pages 329 to 693)

Appeal from the United States District Court,
Southern District of California,
Central Division.

FILED

AUG 4 1950

PAUL P. O'BRIEN,
CLERK



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Appeal from the United States District Court,
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BERTRAM A. SCHWARZ

called as a witness by and on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

The Clerk: Will you please state your name?

The Witness: Bertram A. Schwarz.

Direct Examination

By Mr. Lyon:

Q. What is your name—your full name, please?

A. Bertram A. Schwarz.

Q. How old are you? A. 46.

Q. Where do you reside?

A. Kokomo, Indiana.

Q. And what is your occupation?

A. Chief Engineer of Delco Radio Division of the General Motors Corporation.

Q. How long have you been with General Motors?

A. Since about March, 1936.

Q. And how much of that time has been devoted to the Division that you are now with?

A. The entire time although the Division wasn't formulated, officially as a name, until May or June of 1936.

Q. And what is the business of that Division?

A. The principal business of the Division is to manufacture automobile radio receivers.

Q. And where is that manufacturing carried on?

A. The largest part of it is in Kokomo, Indiana. We also have a factory in Chicago, Illinois.

Q. Prior to going with the General Motors Cor-

(Testimony of Bertram A. Schwarz.)

poration in 1936, with whom were you employed?

A. Immediately prior I was with the Zenith Radio Corporation.

Q. In what capacity?

A. As Chief Engineer of the automobile radio division.

Q. For how long?

A. From 1934 to the end of 1935. No, to the beginning of 1936.

Q. Prior to that by whom were you employed?

A. I was employed in Canada with the DeForest-Crosley Radio Corporation, Limited.

Q. In what capacity?

A. As vice president in charge of engineering.

Q. And what was the business of that company?

A. Manufacturer of radios—household radios was the principal product, although there was also automobile radios.

Q. And during what period of time were you employed [315] by that company?

A. From 1929 to 1934.

Q. And prior to that by whom were you employed?

A. I was employed by the Charles Freshman Company in New York City.

Q. And what was the business of that company?

A. They were a radio manufacturer—a manufacturer of household radios.

Q. And what was your position with that company? A. I was Chief Engineer.

Q. For how long?

(Testimony of Bertram A. Schwarz.)

A. During the year 1929.

Q. And prior to that by whom were you employed?

A. I was employed by the Howard Radio Company of Chicago, Illinois.

Q. In what capacity?

A. As senior electrical engineer. I don't think there was any official title. I assumed the position of Chief Engineer.

Q. What was the business of that company at that time?

A. Manufacturer of household radio sets.

Q. And how long were you with them?

A. I was with them for two years, 1927 and 1928.

Q. And prior to that by whom were you employed? [316]

A. I am not sure of this but in one year I was with two companies, the Gayrod Radio Company of Bellville, New Jersey, and the Colonial Radio Company of Long Island City, New York.

Q. Did you have a school training in engineering? A. Yes, I have.

Q. And did that school training include the subject of machine designing?

A. Yes; that was part of the training.

Q. Now, since you have been out of school as I understand it, you have been in the radio business—I mean by that the business connected with companies manufacturing radio receivers?

A. That is correct.

(Testimony of Bertram A. Schwarz.)

Q. Does your company employ machine designers? A. Yes, in product design.

Q. Are those men engaged in designing radio tuners? A. Yes, they are.

Q. And are they under your supervision and direction? A. Yes, they are.

Q. Have you yourself in the past designed radio tuners? A. Yes, I have.

Q. For the General Motors Corporation?

A. For the General Motors—primarily for General [317] Motors.

Q. And to what extent have you been responsible for the design of the various types of tuners that have been manufactured by your division of General Motors since you have been with that division?

A. I think I have been largely responsible for outlining the needs and the type of tuners and working out some of the major details of them.

Q. And the rest of the fill-in of the design has been done by whom?

A. By mechanical designers under my direction.

Q. Are you acquainted with the type of tuners that are being supplied by the automobile manufacturers with their current automobiles?

A. Yes, I am.

Q. You were here yesterday at the trial and have been here today and you have heard the reference that was made to the automatic tuners of type having an adjustable tappet and rocker. Do you understand what that is?

(Testimony of Bertram A. Schwarz.)

A. Yes, I think I do.

Q. And you have heard the testimony of Mr. Leishman with reference to putting the center of that tappet on center with the centers of the rocker?

A. Yes, I have.

Q. Do you understand what that [318] means?

A. Yes, I do.

Q. Now, with reference to the current models of the Chrysler Corporation, including Plymouth, Dodge, DeSoto and Chrysler, do you know what type of tuners are supplied by the manufacturers of those cars with their current models?

A. Yes, I do.

Q. Is it a type that has an adjustable tappet and rocker? A. No.

Q. What type is it?

A. It is a switch type.

Q. Is it to your knowledge sufficiently accurate in tuning to do a satisfactory job?

A. Yes, I find it is.

Q. Can you answer the same questions as to the current models of the Ford car? A. Yes.

Q. Will you do so?

A. It does not have a tappet and rocker arrangement. It uses an advancing screw and nut and it is quite accurate.

Q. In either case, either the tuners supplied with the Chrysler Corporation models or the Ford, is any use made of this feature of coaxiality that has been referred to by Mr. Leishman? [319]

A. No.

(Testimony of Bertram A. Schwarz.)

The Court: Mr. Schwarz, will you raise your voice a little, please?

The Witness: Yes.

Q. (By Mr. Lyon): Do you know what type of tuner is supplied by the Packard Company with its car? A. Yes, I do.

Q. Is it a type having an adjustable tappet and rocker? A. No, it is not.

Q. What type does it have?

A. It is an advancing nut and screw with no coaxiality and a single bar that is spring-loaded against the nut, similar to the Marvin.

Q. What can you say as to the accuracy of the tuning of that device?

A. The accuracy in tuning we find is satisfactory.

Q. Can you answer the same questions as to the Studebaker cars?

A. Yes. It is the same tuner as the Packard with slightly different arrangement of buttons and knobs.

Q. And with equally satisfactory results?

A. Equally satisfactory accuracy.

Q. Can you answer the same questions as to the Nash car? [320]

A. Yes, sir. It is the same tuner as is used on the Ford with equally satisfactory accuracy.

Q. Can you answer the same question as to the Hudson car?

A. The Hudson car? I am not entirely sure of that.

(Testimony of Bertram A. Schwarz.)

Q. Can you answer the questions as to the Kaiser-Frazier car?

A. Yes. It is the same tuner as the Ford, same fundamental tuner with the same accuracy.

Q. Do any of these tuners on any of the cars, that come with any of the cars, that I have enumerated in these questions, employ A.F.C.?

A. No, they do not.

Q. You are familiar with A.F.C., are you?

A. Yes, sir.

Q. And the uses that have been made of it in the radio industry?

A. Yes, I think so.

Q. And what is it for?

A. It is intended—its principal intention was to make careless tuning—to take care of careless tuning by the novice. It was brought out so you could tune approximately to the correct position and it would snap into tune. That was one of its purposes. Another of its purposes was to take care of drift—electrical drift in the [321] radio sets, because you have electrical circuits which drift with temperature and humidity, so after you set them to an accurate tuning, why, they would drift off and this was intended to compensate for that.

Q. Has A.F.C. anything to do with the accuracy of positioning of the shaft or the condenser in a tuner?

A. Well, it would make possible correct tuning when you incorrectly tuned it by any means.

Q. Are you familiar with the present situation with reference to the types of tuners that are being employed in home receivers?

(Testimony of Bertram A. Schwarz.)

A. To a considerable extent, although my knowledge is not as complete as it is in automobile receivers.

Q. There was a time, was there not, when automatic tuning was being used quite widely on home receivers? A. That is correct.

Q. And is that condition continuing today?

A. No. Since the war that has gradually decreased. Its popularity has decreased.

Q. Can you explain why?

A. Well, partly because of cost. Partly—mostly because of the complications in frequency modulation.

Q. You mean by that the modern sets are coming out with F.M. as well as A.M. receivers?

A. That is correct. [322]

Q. And has anyone been able to devise an automatic tuner that is satisfactory and accurate enough to operate with F.M. signals?

A. No, I don't believe—I don't know of any.

Q. I show you Plaintiff's Exhibit No. 3 for identification. Can you tell me what this device is?

A. Yes. I am quite familiar with this device. This is a tuner that we manufactured beginning in 1938 and in the beginning for the Buick Motor Car Division, but continuing for Chevrolet in that year in 1939 and 1940—a part of 1940 at least. It is a tuner that I think I largely devised. [323]

Q. Can you give us any idea how many of these tuners of this type Exhibit 3 were produced and put

(Testimony of Bertram A. Schwarz.)

on the General Motors automobiles during the years that you have stated?

A. I can give an order of magnitude. The exact figures are not available to me, but we made about 100,000 automobile sets for Buick each year of those three years, and this tuner was in every one of them. We made a comparable number for Chevrolet, and this tuner was in every one of them for two, at least, of those three years. That would place the total number at something like four hundred, five hundred thousand tuners, perhaps.

Q. I will ask you to look at the Zenith tuner, of which model H is an example, and state whether you understand this tuner. A. Yes, I do.

Q. Is there any feature of Plaintiff's Exhibit 3 which is similar to a distinctive feature of the Zenith tuner Exhibit H?

A. Yes, there is considerable similarity.

Q. In what respect?

A. They are both rack tuners, they both turn the tuning element 180 degrees; in our tuner we use separate racks for each station position, in this they merely use two stages of racks and gang them together with bars.

The Court: That is the Schaffer, isn't it? [324]

The Witness: That is the Schaffer tuner. We felt at liberty with our design, with what we considered some improvements, because of the existence of the Schaffer tuner, which we studied at the time and knowing it was available to us. You have just the two racks on this side and two racks on that

(Testimony of Bertram A. Schwarz.)

side, co-operating by connecting bars, whereas on our tuner we have separate racks for each station, that is, a rack here and a rack there (indicating), and then when you push each one you move the single pair of racks. And you have a single pinion going through just as you have a single pinion going through on that one, or a pinion shaft.

Q. (By Mr. Lyon): Is the tuner of the type shown in Plaintiff's Exhibit 3 similar to the Zenith tuner Exhibit H, in that there is no rocker employed? A. There is no rocker employed.

Q. What can you tell us as to whether or not the tuners, like Plaintiff's Exhibit 3 that you equipped on the General Motors cars, gave satisfactory accuracy of tuning and of condenser shaft positioning?

A. Well, first of all, our requirement for accuracy in those days was the same as the requirement for accuracy now. The sets were just as selective. We had no A.F.C. then, any more than we have A.F.C. now. And the tuning accuracy was considered very satisfactory in this tuner. [325]

The Court: I want to ask you a question in that respect.

Do you remember the Century model of the Buick?

The Witness: Yes, your Honor.

The Court: Was that radio in the Century model.

The Witness: Yes, this was in the Century model, and the Century model was during one of the years that this was used.

(Testimony of Bertram A. Schwarz.)

The Court: I am speaking now of the year 1940.

The Witness: The 1940 model of the Century, that is the year we changed from this tuner to another for some other reasons, and I would have to refer to my notes to be absolutely certain, but I am reasonably certain that it was used in that model.

May I make a statement about this tuner?

Mr. Lyon: Yes.

The Witness: I notice in trying to push this tuner, that it appears to be hard to push, and one of the reasons for that is we have an electric clutch here on the side that brings in an irreversible manual drive, and that irreversible manual drive is to allow you to tune manually. It also restrains the tuner from bumping off stations. And, of course, you would have to connect it to a battery, because that electric clutch operates every time you push the push button when in normal push button operation. Consequently, [326] when you push it now it appears to be a hard tuner.

Mr. Lyon: At this time I will offer in evidence Plaintiff's Exhibit 3.

Mr. Flam: I object to it as being irrelevant to any of the issues in this case.

The Court: Overruled.

The Clerk: Plaintiff's Exhibit 3 in evidence.

(The instrument referred to was marked Plaintiff's Exhibit 3, and was received in evidence.)

Q. (By Mr. Lyon): Mr. Schwarz, I show you

(Testimony of Bertram A. Schwarz.)

Defendant's Exhibit JJ, and Plaintiff's Exhibit No. 2 to the complaint in this case, and ask you if you are familiar with those. A. Yes, I am.

Q. Do you know who designed those tuners?

A. Well, I participated in the design of them and directed intimately a good portion of the design.

Q. Is General Motors at the present time equipping its current models with tuners like those shown by these last mentioned exhibits?

A. Some of the current models have this particular type of tuner.

Q. Can you tell us what one?

A. The Chevrolet and the Oldsmobile and the Cadillac.

Q. You recognize this tuner as of the type which has been referred to here as having an adjustable tappet and [327] a rocker? A. Yes, I do.

Q. Will you state whether or not in tuners of that type as you have designed them and General Motors has produced them, the centers of those tappets are arranged so that they are symmetrical or concentric or identical with the centers of the rocker?

A. Yes, I believe they are concentric.

Q. You understand that that has been referred to here as coaxiality where those two centers register? A. Yes.

Q. Does that feature incorporate any established principle of engineering?

Mr. Flam: If your Honor please, the question is

(Testimony of Bertram A. Schwarz.)

indefinite. I don't know whether the question means whether it incorporates any feature of engineering found in rather foreign fields or in this particular field of automatic tuning.

Mr. Lyon: I am going to ask him what and where. It is a preliminary question and I didn't want to lead him.

The Court: Coaxiality generally, do you mean in general nomenclature?

Mr. Lyon: Yes, your Honor.

The Court: Overruled.

A. I think the principle of coaxiality is understood [328] by machine designers.

Q. What principle of engineering is utilized in establishing such coaxiality?

A. The elimination of all moment arms, or making the center of rotation the same, means the center of travel, the arcuate travel is the same.

Q. To your knowledge how long has that principle been commonly known to engineers?

A. I wouldn't know how far back that would go.

Q. To your experience how far does it go with you?

A. From the time of my schooling, from the time of studying mechanical design, mechanical engineering.

Q. Will you state whether or not it is a well-known principle of engineering, this matter of eliminating moments by making things concentric or symmetrical?

A. I believe the elimination of moments mak-

(Testimony of Bertram A. Schwarz.)

ing things line up concentric, coaxial, I believe is a well-known and well-established principle of engineering.

Q. Based on your experience with the machine designers that you have had working under you during your career, in your opinion or in your experience have you found that the average or ordinary machine designer knows of that principle?

A. That would be a difficult question to answer that way, but I would expect a good many machine designers to understand the principle of moment arms and the principle [339] of putting centers on center.

Q. Are you speaking now as of only today or was the situation any different at any time back to the beginning of your experience in the radio industry?

A. During my experience in radio industry, from the beginning of that I would think that that would be a known principle of lining centers up to have them revolve in the same order in the same circle.

The Court: Wouldn't that be true generally from a mechanical standpoint, leaving out the question of electronics or electrical mechanism, wouldn't that be true generally?

The Witness: I think, your Honor, it would. I believe when you line up two things to have minimum bind you would line them up on center. When you want to put two wheels adjacent to the other you would want them on center. In this particular

(Testimony of Bertram A. Schwarz.)

case you have one as a virtual center and the other as an actual center. The virtual is either in the tappet or the rocker, and vice versa for the actual. If you want them to operate in the same space and revolve in the same circle, I would expect them to be put in the same position.

The Court: The only feature that would apply in these electrical devices would be the method of applying the energy; in one case it would be applied mechanically and in the other electrically, is that it?

The Witness: Yes, you want the mechanical device to perform an electrical function later, the electrical function being to tune the radio set.

Q. (By Mr. Lyon): As far as the tappet acting on the rocker to position the rocker to something that corresponds to a position that you desire the condenser to have, is that in any way an electrical function or entirely a mechanical function?

A. It is a mechanical function that finally transfers into an electrical one. In other words, the angularity in this particular case determines the position of the cores in the coils as I believe has been explained, determining the tuning of the radio set electrically, and, therefore, you are interested in the actual position of those cores in the coils and that is transferred here into an angular position of this rocker arm. And that is also true whether it be a condenser or an iron core.

Q. I show you Plaintiff's Exhibit No. 1 to the complaint in this case, and the corresponding more complete model Defendant's Exhibit No. NN; do

(Testimony of Bertram A. Schwarz.)

you know who designed that type of tuner?

A. I could not testify to the actual designer. It would be hearsay.

Q. Do you recognize this tuner?

A. Yes, I recognize the tuner. We adapted it to our [331] use.

Q. You obtained that design from——

A. Another source.

Q. And was that from the Radio Condenser Company? A. Radio Condenser Company.

Q. They were making a somewhat similar tuner?

A. That's right. It started out to be a gang condenser tuner and the transition was from condenser tuning into inductance tuning, permeability tuning. We took the same tuner and left off the condenser and put it in the tuning coils in place of it.

The Court: I think we will take a recess for a moment to adjust this air a little bit.

(A recess was taken.)

Q. (By Mr. Lyon): You have stated, Mr. Schwarz, that the tuner of the type shown in Exhibit 1 to the complaint and in Defendant's Exhibit NN was developed from an earlier tuner that had been designed by the Radio Condenser Company, is that right?

A. It was designed by someone else, and we believe by the Radio Condenser Company.

Q. Had you been furnished with those tuners by the Radio Condenser Company?

A. Yes, we had. We had been furnished with

(Testimony of Bertram A. Schwarz.)

that same tuner with a gang condenser attached by the Radio Condenser [332] Company.

Q. In commercial quantities?

A. In commercial quantities.

Q. Did you ever determine whether or not that tuner was patented?

A. I would have to leave that to our patent counsel. He did the investigation of the patentability.

Q. Mr. Fowler sitting here?

A. Mr. Fowler.

Q. Did you ever see this patent, that I am handing you, to Mr. J. F. Teaf, assigned to the Condenser Development Corporation, granted February 17, 1944, No. 2,273,499?

A. Yes, I recognize the patent, although the details of it are not familiar to me at the moment. At the time we went over them I was familiar with the details.

Q. Can you examine the drawings briefly of that patent and state whether or not the forerunners of the tuners, such as the type constituting Plaintiff's Exhibit No. 1 to the complaint, were similar to that shown in those drawings?

A. Figure 9, I would say, is very similar.

Mr. Lyon: The patent which has last been shown to the witness is offered in evidence as Plaintiff's Exhibit No. 4.

The Court: So ordered.

The Clerk: Plaintiff's Exhibit 4 in evidence.

(The document referred to was marked

(Testimony of Bertram A. Schwarz.)

Plaintiff's Exhibit No. 4, and was received in evidence.)

Q. (By Mr. Lyon): Will you tell us what cars of the General Motors Corporation are being equipped with tuners like these of the type shown by Exhibit 1 to the complaint and Defendant's Exhibit NN?

A. Does that embrace both the condenser tuners—the tuner part itself we are talking about?

Q. As I understand it, this type of tuner is made for use both with condenser type tuners and permeability type tuners? A. That is quite correct.

Q. You answer the question covering both, if you will?

A. We are supplying the condenser type—we are using the condenser type which we purchase from Radio Condenser Company, and we are using that in the Pontiac set. We are manufacturing the iron core tuner type, and we are using that in the Buick and the current Chevrolet set.

Q. What is the principal difference between this type of tuner, so far as the tuner itself is concerned, that is shown by Exhibit 1 to the complaint, as compared with the type of tuner that is shown by Exhibit 2 to the complaint?

A. To be perfectly certain I would like to see Exhibit 2 [334]

Q. Exhibit 2 to the complaint is also illustrated by Defendant's Exhibit JJ.

A. Exhibit 1, the plungers, do not pass through the center of the treadle bar, the tappet has a vir-

(Testimony of Bertram A. Schwarz.)

tual center, it has a screw type lock-up, which, of course, is not the subject of this specification. Exhibit 2 has the plunger going through the center of the rocker. I called it the treadle bar, I believe. It passes through the center of the rocker, and has the tappet unlocked and locked by what we call a push-pull lock-up device, the device that unlocks by pulling the button out, and locks by pushing it in, as compared to a screw type lock-up on this plunger of Exhibit 1.

The Court: Actuate that one, please.

The Witness: Yes.

(Witness demonstrating.)

The Witness: Then to unlock it, we lift the button and unlock this set screw here instead of pulling out the unlocking mechanism. And to lock it we rotate it in the opposite direction and push it in this way. (Indicating).

Q. (By Mr. Lyon): Mr. Leishman has called attention to the buttons, or whatever you call them, that appear on the tuners such as shown by Exhibit NN, and Exhibit 1 to the complaint; what are those buttons for?

A. It is an ornamental feature that Chevrolet wanted something different. They wanted not to have to pull a button [335] off to set up the station, so that we hinged the buttons to make it easier to get at the lock-up screws. You pull the button up so you can get to the screw, and then the lock-up screw then becomes available. If you didn't do that, you would have to pull the button off.

(Testimony of Bertram A. Schwarz.)

Q. Is that tappet in that type of tuner carried by that button?

A. No; the tappet is carried by the plunger.

Q. You have stated in connection with the tuner of the type constituting Exhibit 1 to the complaint, that it has a virtual center. Does the tappet have a pivot which is coaxial with the axis of the rocker?

A. The tappet's pivot is coaxial with the axis of the rocker.

Q. Is it the pivot of the tappet or the phantom—

A. It is the phantom pivot.

Q. You mean by a phantom pivot what, so the court will understand?

A. To illustrate: I may not be able to put it in words too well, but to illustrate it, in this particular type of tappet it is pivoted there with a rivet, and that rotates—maybe I can demonstrate that by pushing this in and rotating it. See, it rotates about that rivet in the center.

The Court: Why do you call it a phantom?

The Witness: It is a phantom because the support is really a seat around the outside of the tappet, and the phantom position of rotation, the center of rotation, therefore, is phantom or virtual in here somewhere (indicating). In other words, the cam is held on the outside like a half moon or crescent, and rotates around a seat, and here is your center of rotation (indicating), but that is a phantom, there is no actual rivet or bearing point there.

Q. (By Mr. Lyon): In other words, in the Exhibit 1 to the complaint type the tappet does not

(Testimony of Bertram A. Schwarz.)

have an actual pivot which is physically coaxial with the axis of the rocker?

A. It does not have an acutal pivot physically coaxial.

Q. But the center of rotation of the tappet is around a point which is not defined by any mechanism, and that point is coaxial with the axis of the rocker, is that correct?

A. I think that is a good description of it. That is correct.

Q. A point in space, I might say, your Honor. Is that correct?

A. That is correct, a point in space.

The Court: Is that what you mean by a phantom?

The Witness: Yes, the phantom is the point in space.

Q. (By Mr. Lyon): Can you tell us what difference it would make or what if any difference in the operation of either of these type of tuners, Exhibits 1 or 2 to the complaint, if these centers we have been talking about were not coaxial?

A. Coaxiality is a good design feature, but not one of major importance. We feel that there are many other items of the tuner design that might swamp out the improvement which might be gained by the coaxiality. For example, the fit of the bearings, or a burr on the tappet, or a bent tappet [338] would overcome any good that might be gotten from coaxiality. In other words, coaxiality is a good feature, but it is not the only feature which must be

(Testimony of Bertram A. Schwarz.)

considered in the design of a tuner to be accurate enough.

Mr. Flam: If your Honor please, I move to strike that answer because it seems to me an attack upon the utility of the device used which incorporates the important feature of the patent. Any attempt to minimize the accomplishment being accomplished by the patent—there is an effect of estoppel against.

In *United States Gypsum Company versus Consolidated Expanded Metal Companies*, 130 Fed. (2d) 888, it says:

“It has been held in adjudication without number, that one who appropriates the teachings of a patent may not deny the utility of the invention. This is, of course, both reasonable and logical.”

They use the coaxial arrangement and they try to minimize it by saying it is not of much use.

Mr. Lyon: If your Honor please, I don't think the witness is denying the utility of the design; he is trying to give your Honor his opinion as to the importance of the feature. It has been played up here as being all important in automatic tuning in the defendant's testimony. The witness is not denying its utility, but is trying to inform your Honor of how much importance it really has. [339]

It has been suggested to your Honor that this matter of putting two centers together in this device should be held to be a generic invention. And it could be much less than that and still have utility.

I think we are entitled to the witness' experience

(Testimony of Bertram A. Schwarz.)

as to just what importance it has in the tuner, as a matter of fact.

The Court: I think so. I don't think the principle of the Gypsum case there is necessarily applicable at this point of the case at bar.

I gather from the defendant's testimony and from the argument that has been presented here that he claims to have what I call a generic patent. I am not using those terms because it is a play on words. That is not what the court means. What I mean is a generic patent in the sense of the case of Eibel Process Company versus Minnesota & Ontario Paper Company (261 U. S. 45), and I don't think the principle applied there has been improved on, notwithstanding the multitude of decisions that we have had since.

There must be a starting point, and then if during the progress of the art there are improvements, the degree of improvement is necessarily an issue in these patent cases.

As I understand the defendant in this case, he claims to be the pioneer in this field, and that all of these other inventions or patents, whichever term you want to use, are [340] simply the result of the teachings which he first conceived and put into his patent.

Mr. Flam: Your Honor, that matter of claiming to be a pioneer, of course he is not claiming to be the first one to make and devise an automatic tuner. Let's see the situation here. He obtains the patent, a rather narrow one, I am quite sure, but limited

(Testimony of Bertram A. Schwarz.)

to this coaxial arrangement between the rocker and the tappet. That is a rather narrow scope. All the plaintiff has to do, General Motors Corporation, is to separate those two axes. If it is just as good, why do they insist upon taking that very feature, and then kick it around and say, "Well, it isn't much good anyway, we use it because it is just a good principle of design."

The Court: I think that argument you have just made would justify the evidence. I am not saying which side of it the court is going to take. I will say that when the case is decided. The motion to strike is denied.

Q. (By Mr. Lyon): Mr. Schwarz, if it isn't essential to the operativeness of these tuners that these centers be coaxial, why do you make them coaxial in your tuners?

A. Because I believe it is good engineering to make them coaxial.

Q. I wish you would explain to the court how these tuners are operated and constructed with reference to the load that is put on the shaft that will influence whether the shaft would be apt to be moved in any undesirable manner if [341] the centers were not exactly coaxial? I have in mind the demonstration that was made by the defendant with Exhibit M where the shaft is practically entirely friction-free to float. I don't know as his Honor has felt that shaft. There is no load on that shaft, your Honor, and the slightest pressure will turn it.

A. It is necessary to restrain the rocker, or to

(Testimony of Bertram A. Schwarz.)

have more friction in the rocker than the friction in the tappet to move the tappet, because if the friction in the tappet was greater than the friction in the rocker, the rocker then would move away from the tappet instead of the tappet taking the correct position of the rocker. So that a frictional relationship is quite important.

Q. How is that brought about in the tuners of Exhibit 1 and Exhibit 2 to the complaint?

A. The load of the tuner constitutes some of the friction which we have initially on the rocker. The load in this instance in Exhibit 1 consists of the pointer mechanism of the cores which tune the radio set electrically and the manually tuning gearing means which in this instance is not de-coupled during tuning. That spinning the manual around, this being the manual, the gear here, and the shaft, spinning the manual around constitutes quite a frictional load on the rocker. Therefore, when we open up the tappet to set it it can be expected that the tappet [342] friction would be less than the rocker friction.

Q. You are referring in your last answer to Plaintiff's Exhibit No. 1 to the complaint?

A. Yes.

Q. You may continue. I just wanted the record to identify that.

A. If, then, there was a bind or a burr or a bend in the tappet, of course the added friction of the tappet would cause the rocker to move to a new position, and in that case it would be necessary to re-

(Testimony of Bertram A. Schwarz.)

strain it manually while setting up the push button. I am not sure if I answered the complete question.

Q. If you have anything further with reference to Exhibit 2 type of tuner, I wish you would state as to that type.

A. Exhibit 2 tuner, unfortunately, doesn't have the manual gearing means connected to it. In this case we use a worm drive for coupling the tuner shaft to the manual tuning means, and a worm drive is irreversible. Of course, it would mean that the tuner shaft would never be moved. Therefore, in the normal process of tuning the first motion of the plunger is to de-couple by a clutch gear the irreversible worm from the tuner shaft and allow you to tune the tuner shaft to the desired push button tuning position. If, however, we are going to set up the push [343] button on the station, we have as a feature of this tuner that when the setting of the tappet is unlocked the clutch does not operate, and the worm, irreversible worm connection to the tuner shaft, remains connected and restrains the rocker from moving to any other position than that to which it was set, and to which we want to set our plunger. In that way our frictional relationship between the tappet and the rocker is minimized. We are not as critically concerned about that relationship as we would be if we had a device which could freely rotate when we were trying to set up the tappet to a new position.

Q. Did you observe the demonstration that was made by the defendant with Exhibit E today, which

(Testimony of Bertram A. Schwarz.)

he said demonstrated the absence of coaxiality, and he set the tappet, then brought it down and showed that it would move the treadle bar or rocker?

A. Yes, I think I paid attention to that demonstration.

Q. In view of what you have had to say about the load that is put on the rocker in the General Motors tuners that we have before you, Exhibit 1 and Exhibit 2 type to the complaint, does that demonstration apply to the General Motors tuners?

A. Yes, but as I tried to make clear, in the type of the worm gear, particularly, the importance of it is [344] lessened because of the restraint on the one, and it is lessened—it is confined by whatever clearances we have in the arm. In other words, if it can't jump very far it isn't very important.

Q. In your opinion, based on your experience with these tuners and your engineering designing, would the amount of that possible movement of the rocker, in view of the load on the rocker in your tuners, be of any serious significance, if the centers were not coaxial?

A. The degree is hard to testify to. I would think that it would not be as serious as if you didn't take other means to minimize it.

Q. I show you a model which I used in my opening statement, and I will ask you if you ever saw that model before?

A. Yes, this is the model we had our engineering model shop make under my direction. I assigned the project to one of our mechanical engi-

(Testimony of Bertram A. Schwarz.)

neers and one of our model makers and asked him to make it.

Mr. Flam: If your Honor please, if this model is going to be used, I want to register an objection to it. If it is supposed to be built in accordance with the patent, your Honor will note that it is almost impossible, without the use of a great deal of force, to move these rockers and tappets, to move the two rockers. Apparently there is some [345] kind of a drag somewhere in these shafts. Whether they are coaxial or not, I don't know. But your Honor can see if he tries it.

The Court: I won't try it until it is in evidence. I want to know what it is.

Mr. Flam: It purports to be a reproduction of what is shown in the patent in suit.

The Court: You mean that it purports to show that the mechanism that is delineated in the drawings of the patent in suit and illustrated by the description will not work, it is so rigid that it will not work, is that what you mean?

Mr. Flam: This apparatus is not in accordance with the description in the application for that reason. The rockers and the condensers are so arranged that a considerable amount of force must be exerted upon those rockers to adjust the position of the condensers there.

The Court: Well, it can be used for the purpose of illustration, anyhow.

Mr. Lyon: I am first trying to have the witness identify the model as a physical representation of

(Testimony of Bertram A. Schwarz.)

the drawing of the re-issue patent in suit, so that your Honor can compare that physical entity with the accused devices.

The Court: We will have it marked for identification, and then you can go ahead with your examination, and we may [346] have to defer the admission of it, if it is offered in evidence, until such time as they can cross-examine on that aspect of the situation.

The Clerk: Plaintiff's Exhibit 5, for identification.

(The instrument referred to was marked as Plaintiff's Exhibit No. 5, for identification.)

Q. (By Mr. Lyon): In the production of this Plaintiff's Exhibit 5, for identification, was the device shaped, particularly, in exact accord with the drawing of the reissue patent in suit, Defendant's Exhibit A?

A. The tuner was copied from the drawings, and we attempted to scale the drawing in the absence of any other specifications.

Q. You have added to the drawings shown in Exhibit A certain condensers, have you not?

A. That is correct.

Q. Are those condensers indicated in the patent?

A. Yes, there is one section of the patent that says it can be geared to, or, in other words, coupled to through cords, belts, shafts, or universal joints, chains, gears, or even flexible shafts.

Q. Dismissing for the moment the condensers and coming just to the parts that are shown in the

(Testimony of Bertram A. Schwarz.)

drawings of the re-issue patent in suit, is it your testimony that you have checked this model and that it is exactly in accord [347] with those drawings?

A. The tuner portion is exactly in accordance with those drawings as nearly as we can scale them and make them by a competent model maker.

Q. There has been some criticism suggested here of the operativeness of this model because too much force, it is said, is required to move the inner rocker. Can you tell us why it is so difficult to move that inner rocker?

A. I think that might be a question of alignment and the type of gearing needed. The specification does not call for anything in here (indicating), and since we have a bearing here and a bearing here, and then we go through a fairly rigid joint here, and a bearing here, and a bearing on this side, we have too many bearings, perhaps, to line up. It might be that a universal joint might assist that a trifle. But, of course, the specification does not call for anything of that sort. [348]

Q. Does the specification of the reissue patent tell you how much force should be required to move the inner rocker? A. Yes.

Q. Does it tell you what type of condenser should be used? A. No.

Q. Is this condenser in the model, Plaintiff's Exhibit 5, is it connected to the inner rocker, a fixed condenser?

Mr. Flam: I didn't understand you.

(Testimony of Bertram A. Schwarz.)

Q. (By Mr. Lyon): Is that a fixed condenser?

A. That is a variable condenser, and it is a standard current model, or recently current.

Q. Does that require any greater or less force to move or turn the condenser leaves than the condensers that were in use on tuners in 1934 to '37, to your knowledge?

A. When the model was built it was a standard tuner, and it might have been a little less. It wouldn't have been any more than the condensers that were available in those earlier years.

Q. In other words, this reissue patent is entirely silent. About how much force is required to turn this rocker, entirely silent about just what type of condenser is to be used with it, but this model as you have made it employs actually a condenser of a standard type as of those years, [349] isn't that correct, so far as the force required to turn it?

A. When the model was built the force required to turn the gang condenser, and I believe it still exhibits about that same force. Without having measurement means before me, I would say that is correct, that it is about the same order of magnitude as the condensers available at that time.

Mr. Flam: Your Honor, I move to strike that answer, because I don't think the witness is competent. I don't see how he can remember exactly how to compare the force required to turn this with what was required about 10, 15 years ago.

Q. (By Mr. Lyon): Can you tell us how you

(Testimony of Bertram A. Schwarz.)

can remember that, if there is anything extraordinary about being able to remember that? Were you working with those condensers then?

A. Yes, we were. And I know the specifications then and now, but of course I have no instruments before me right now. The specifications on gang condensers that we asked for was a rotating turning force about three inch ounces. That number of years ago I think we had to take condensers up to five inch ounces, and there are times when we still can't buy them at three inch ounces. Whether this particular condenser is three inch ounces, I am not prepared to say [350] without measurement.

The Court: That would be a matter of precision measurement?

The Witness: Yes, precision measurement with instruments.

Q. (By Mr. Lyon): Have you determined approximately how many degrees of movement are possible with the inner rocker in a device constructed like this model, Plaintiff's Exhibit 5, where there is also the outer rocker and the double tappet to operate both rockers?

A. I am sorry, I haven't those figures available. I know it was a very limited angular rotation.

Q. Can you illustrate to the court, even though you don't have the actual measurement, what the limiting factor is?

A. Let me see if I can.

I am afraid I will have to do a little studying of

(Testimony of Bertram A. Schwarz.)

it before I can make a very effective demonstration. I would take too much of the court's time.

Q. But you know it is a very limited amount?

A. Yes, and it is due to the fact that one is within the other, and when set from one extreme of one to the other, one cuts into the other's rotation. I would have to work this one to demonstrate it. I am not very dextrous at the moment. [351]

Q. Do you consider this model, Exhibit 5, as thoroughly illustrating in its tuner mechanism the structure shown in the drawings of the reissue patent, Defendant's Exhibit A? And in its application to the condensers a thorough application of those condensers to that type of tuner?

Mr. Flam: Your Honor, that calls for a conclusion. I object to it. He testified how it was made, and I think it is within the province of the court to decide whether it is a fair embodiment of the structure, or not.

The Court: I think so. Objection sustained.

Mr. Lyon: I will offer Plaintiff's Exhibit 5 in evidence, your Honor, as illustrating in the mechanical parts corresponding to the drawings of the patent in suit a model illustrating those structures, and insofar as the embodiment with the condensers is concerned, merely an attempt to illustrate how they could be combined and would be combined with condensers, but with no attempt at precision, because the patent in suit doesn't give any details as to that arrangement.

(Testimony of Bertram A. Schwarz.)

Mr. Flam: If your Honor please, the witness himself stated that there might be some binding in the shafts, and pointed out other things that make it deviate from what is shown in the patent. I, therefore, renew my objection to the introduction of this model in evidence. [352]

The Court: I think so. There ought to be some further evidence as to the functioning of the model before it is admissible.

Mr. Lyon: Let me have the model, Mr. Clerk.

The Court: You had better leave it here; it is marked for identification.

Mr. Lyon: I just wanted to ask the witness.

Q. (By Mr. Lyon): Mr. Witness, are you prepared to demonstrate the operation of this model, to illustrate the operation called for by the specifications of the reissue patent in suit, or would you rather take this model and see if you can loosen it up some?

A. I would much rather do that, because it has been many months since I have seen it.

Mr. Lyon: If I may, I will withhold the question.

The Court: Yes. Then if you will be able to tell us what you did to get it in shape. I don't suppose there is any objection to that, is there, Mr. Flam?

Mr. Flam: No.

The Court: He will be permitted to take it to-night if he wants to take it at the recess. Of course if you disassemble anything, Mr. Schwarz, you bring those disassembled parts with it.

(Testimony of Bertram A. Schwarz.)

The Witness: Yes. I am only going to try to line it up a little more accurately, and go through the motions of [353] turning the thing. It hasn't been actuated for many months.

Q. Prior to 1937, Mr. Schwarz, what usage was there of push button or dial tuning in the radio industry, to your knowledge?

A. Of course there was the Zenith cash register tuner, which is introduced in evidence here, in 1927 and '28. Then there was a motor tuner that I am familiar with that was used by Wurlitzer in 1929, approximately. And there was a telephone dial that was used by R.C.A. in custom built installations, which you could dial your stations, in perhaps 1932 or '33. And then there was the simpler types of telephone dials represented by some of the patents discussed here. I think Fitzgerald is one of them; Briggs and Stratton had demonstrated a few of those; there was the Grigsby-Grunow; Philco; and I am not entirely sure, but I think Stewart Warner made one of those.

Q. Were these various push button or dial tuners that you have named sufficiently accurate for operative purposes for tuning radios?

A. I think some of them were. I think I was shown a demonstration of one, without automatic frequency control, and it did a very creditable job of tuning in a household receiver of about the selectivity of today.

Q. What tuner was that?

(Testimony of Bertram A. Schwarz.)

A. A tuner demonstrated to us by the Briggs and Stratton [354] Manufacturing Company.

Q. When? A. In about 1936.

Q. Were the others satisfactory in performance when combined with A.F.C.?

A. Yes, they were quite satisfactory. That type of tuning, as far as accuracy was concerned, the Philco and the Grigsby-Grunow, I believe, tuned in the station quite accurately.

Mr. Flam: For the record, do you mean by A.F.C., automatic frequency control?

The Witness: Yes.

Mr. Flam: It is the same thing that Mr. Leishman was testifying about yesterday, is that right?

The Witness: Yes. Then, in addition to that tuner, I almost neglected a tuner shown to us by General Instrument in 1936, the latter part of 1936, which was a screw and nut similar to the Marvin teaching, and using a rocker, and it didn't have coaxiality, and we put one of those in a radio set and tried it out for its possible use in an automobile, and we were satisfied accuracy-wise with that device.

Q. (By Mr. Lyon): Referring to house radios, home radios, beginning about 1937 and referring to tuners of the adjustable tappet type, were there any such tuners in use without employing A.F.C.? [355]

A. Yes, there were.

Q. What ones?

A. Adjustable tappet types without A.F.C., let me think. I couldn't state with positiveness. I be-

(Testimony of Bertram A. Schwarz.)

lieve Emerson, but I couldn't state with positiveness.

Q. When we refer to a tuner of the adjustable tappet and rocker type, you are referring to a mechanical tuner, are you not?

A. Yes, we are.

Q. When and by whom were tuners produced of the electric type? [356]

A. The electric type? Crowe Name-Plate made some. Who used them in radio sets I am not familiar with, but they sold some. We made them, that is, Delco radio division for the United Motors Service, early in 1937 or '38. Motorola made one in 1938 and continued it for several years, I am not clear how many.

Q. Those motor or electric tuners differed from mechanical tuners in what general way? Can you make a simple statement of that to the court?

A. They are a multiplicity of some types. The type I am most familiar with, the type we used was a multiplicity of cams on a common tuner shaft that was set to different angular positions, and an electric relay came down on the surface of that cam, and the cam had a high side and a low side, if it fell on the high side the motor would turn in one direction, if it fell on the low side it would turn in another direction until it hit a notch; when it hit a notch the pawl would fall in the notch and turn the motor off, and that would be the in-tune point. You would set the angular position of those notches or cams on the shaft to determine the particular

(Testimony of Bertram A. Schwarz.)

stations for each setting. That was one of the types.

Q. Were those motor or electric tuners used on automobiles at all?

A. That was used on the United Motors automobile set [357] which was put on a great variety of automobiles.

Q. Did you usually hear sort of a hum or noise when it was moving from one station to the other?

A. We had a mute switch on ours which would cut out the speaker during the tune-in process so that you had no electrical noises through the radio until it came in tune.

While we are speaking about electric tuning, there was another type that I have neglected, and that is the one similar to the one that I mentioned before was used by Wurlitzer back in about 1929, then later it was used by Detrola of Detroit, Michigan, in their household sets, and it is what we commonly refer to as a dead spot commutator. That consists of a disc turned by a motor, having one dead position and having two arcs of copper bars. When the finger of the station that you actuate comes in contact with one arc the motor will turn in one direction; if the finger happens to be on the other side of the disc so that the other arc is contacting the finger, the motor turns in the other direction, and when the motor hits the segment between the two copper sections of the commutator it stops, and that is the in-tune position.

Q. As I understand you, these electric or motor-

(Testimony of Bertram A. Schwarz.)

driven tuners were in very wide use in the industry, is that correct?

A. There were quite a few of them. [358]

Q. I don't mean the number of different ones, but I mean the total, they were widely used in the industry?

A. There were quite a number of them made. Motorola made a great quantity of them, the exact quantity, of course, I don't know. We made—I wouldn't have the figures, I would guess that our figures might be around ten, fifteen thousand on the one we made for United Motors, and then of course the others of Wurlitzer, and so on.

Q. Over what period of time were these motor-driven type of tuners being made and sold?

A. Detrola appeared about 1936 or early 1937 and it continued for at least a year, maybe two years, and after that I lost track of it. The Motorola continued from, it was either 1937 or 1938, and continued for a number of years. Whether it continued into 1941, or it was 1940, I am not sure. [359]

Q. What about your own?

A. Our own lasted one year. The reason for it was it was quite expensive and we superseded it with some other tuners.

Q. Were these motor-driven electric tuners accurate so far as tuning was concerned?

A. Yes. The tuner I am most familiar with, our tuner, was quite accurate.

Q. Did these motor-driven or electric tuners

(Testimony of Bertram A. Schwarz.)

have this feature of coaxiality that has been discussed in this case?

A. No, there was no similarity in mechanism at all, no coaxiality involved there of the type we are talking about.

Q. What type of mechanical device, as distinguished from the motor type, was first used in automobile radios?

A. I don't know the first one, but I do know one of the first, and that was the one introduced in evidence here, which we talked about, used in the Buick and later in the Chevrolet in great quantities. If it wasn't the first, it was very close to being one of the first.

Q. What next do you know of the use for that purpose of the mechanical type?

A. The next most popular, and one that perhaps superseded that, was the type around the Marvin construction [360] of an advancing nut with a screw and a rocker.

Q. When did that type come out, Mr. Schwarz?

A. We first introduced it to supersede the electric tuner at United Motors in about 1938.

Q. Did that type employ coaxiality?

A. No, it didn't employ coaxiality.

Q. During what years was your concern producing that Marvin type?

A. I would like to make one correction in the record. I said during 1938. I believe actually it was a little after the first of 1939 that we introduced it. It was in the spring of 1939, I believe.

(Testimony of Bertram A. Schwarz.)

Q. How long did you continue?

A. We continued it until this year.

Q. To what extent?

A. We used that in many hundreds of thousands. We used it first in United Motors before the war, and until the war; we used it on the Oldsmobile, and we used it on the Cadillac; we used it for a while on the Chevrolet. After the war we continued it on the Oldsmobile and the Cadillac until the 1948 models.

Q. You have referred to that as the Marvin type of tuner. I show you a patent to H. M. Marvin, No. 1,707,754. Is that type of tuner described in that patent or illustrated in the drawings of that patent? [361]

A. It has one feature, and I kept calling it, maybe inaccurately, the Marvin tuner.

The Court: Is that the one in the Book of Patents?

Mr. Leishman: It is the one.

The Court: 1,707,754?

The Witness: That is the one. In referring to the Marvin, I was considering the method of adjusting the tappet. The other difference from the Marvin was that we used a single bar rocker as differentiated from a double bar rocker which we have been talking about here. I don't mean two double bar rockers which I would call this. (Indicating.)

Q. (By Mr. Lyon): By "this" you mean Exhibit 5?

(Testimony of Bertram A. Schwarz.)

A. Yes. This being a double bar, and here is another double bar. Ours had only a single bar. To take the place of the other bar we had the spring loaded against the nut, so it is a spring loader tuner.

Q. Therefore you didn't have a rocker in that type of tuner with spaced arms on opposite sides of an axis?

A. No. We had a single arm on one side of the axis, and it is spring loaded up against the interference, the interference being the tappet, and the tappet being an advancing nut, so that there was no question of coaxiality there.

Q. You say that that was your standard production from [362] 1939 to 1947 on your factory equipped cars?

A. Not all factory equipped cars. It was standard production on our Chevrolet for a while, United Motors until the war, on our Oldsmobile and our Cadillac until this year.

Q. What can you say as to the degree of accuracy of that device?

A. It was very satisfactory. I had one on my car for many years during the war and didn't have to reset the buttons for a period of a year at a time.

Q. Do the tuners of the type of exhibits 1 and 2 to the complaint here have any greater accuracy than those Marvin type of devices?

A. That is hard to say, because I believe the degree depends upon the finesse with which all details

(Testimony of Bertram A. Schwarz.)

are watched in both cases. But I would think that it is of exactly the same order of magnitude, exactly the same order of accuracy, with the same care in production.

The Court: I think we will suspend, gentlemen.

We will have to have a session in this case on Saturday, gentlemen, unless we finish tomorrow. I was wondering whether we would make any time by convening earlier tomorrow morning than ordinarily?

Mr. Lyon: I think we are going to be able to get through tomorrow. I have very little more with Mr. Schwarz, and I think my other witness is going to be very short on a [363] different patent.

The Court: How do you feel about it?

Mr. Flam: I will do my best. I hope we can finish. I think if Mr. Lyon gets through not too late in the afternoon we should be able to finish.

Mr. Lyon: I think I will be through tomorrow morning.

The Court: 10:00 o'clock tomorrow morning, gentlemen.

(Whereupon, at 4:35 o'clock p.m., an adjournment was taken until 10:00 o'clock a.m., Friday, May 28, 1948.)

Wednesday, June 2, 1948, 10:00 A.M.

The Court: Ex parte matters?

(No response.)

The Court: Call the case.

The Clerk: 5781-M, General Motors Corporation
v. LeRoy J. Leishman, further trial.

Mr. Lyon: Mr. Schwarz, will you resume the stand?

BERTRAM A. SCHWARZ

called as a witness by and on behalf of the plaintiff,
having been previously sworn, resumed the stand
and testified further as follows:

Direct Examination

(Continued)

By Mr. Lyon:

Q. Have you read the transcript of the testimony you gave at the prior hearing of this case on May 27th A. I have.

Q. Do you want to make any corrections in that testimony as transcribed?

A. On page 319, line 2, the question was: "Now, with reference to the current models of the Chrysler Corporation, including Plymouth, Dodge, DeSoto and Chrysler, do you know what type of tuners are supplied by the manufacturers of those cars with their current models?" and I answered that I did, [371] "Yes, I do"; the question then referred to: "Is it a type that has an adjustable tappet and rocker?" and I answered "No"; and the next question was: "What type is it?" and I answered, "It is a switch type."

With reference to that, I had in mind the radio supplied to the Chrysler line of cars by Philco, who

(Testimony of Bertram A. Schwarz.)

were at one time the sole source, and are continuing as a source, as far as I know, and their tuners have always been and are of the switch type. However, there is another manufacturer, the Colonial Radio, who supply a model to Chrysler, and I am not familiar with the intimate details of the tuner they use.

There is another on page 349, line 4. The question was: "Does the specification of the reissue patent tell you how much force should be required to move the inner rocker?" and the answer recorded here is that I said, "Yes," and it should have been "No."

Q. Just before the adjournment of the hearing in this case on May 27th, you were requested or directed to take the model, Exhibit 5, for identification, and loosen it up. Will you tell the court whether you have done so, and just what you have done with the model since the last hearing in this case, and I will put the model in front of you so that you can demonstrate to the court if you so desire.

The Court: You may put it up here, Mr. Schwarz.

A. I oiled the bearings of the tuner, not of the gang [372] condenser, and then the collar attached to one of the driving gears was loose, and I couldn't remove or tighten the set screw because the head was broken, so a pin was driven into—through the collar into the shaft to tighten it onto the shaft.

(Testimony of Bertram A. Schwarz.)

No parts were removed from the tuner. I then took the condensers and disengaged them from the tuner and made up a torque bar which I have here, and measured the torque of the condensers to see if they were within reason of commercial tolerances, and found with this torque bar attached to this condenser, and this condenser (indicating), when they were disengaged, that this one measured under 3 inch ounces (indicating) and this one measured about 3 inch ounces (indicating), and I had testified that our Delco radio production limit was 3 inch ounces on condensers today used with tuners, and I have since verified that and have since found that we have frequently had to accept condensers considerably in excess of 3 inch ounces, because we are also concerned with the minimum torque on a condenser. By that I mean if these plates are too loose on the shaft and the bearings, then it microphones, we call it, and that is an interaction between the loud speaker sound wave and these plates, causing them to vibrate at the frequency of the sound wave put out by the speaker, producing a howl, and that is a very serious trouble in radios, having nothing to do with tuners.

The next thing we are concerned with is with too light a [373] load on the condensers, that they will shift alignment with temperature or with shock or vibration. Consequently, we are worried about the low limit, and the manufacturers tell us with those low limits they have to have a certain high

(Testimony of Bertram A. Schwarz.)

limit, which is three inch ounces today, and they frequently exceed that. Ten years ago condensers were only available with torque limits of about $4\frac{1}{2}$ inch ounces.

I referred to drawings to refresh my mind on that.

Then after measuring these condensers I engaged them again into the gears, and lined them up reasonably well, and measured with a torque bar the increased torque on the condensers, due to the alignment and due to the load of the tuner itself, and that amounted to about one-half inch ounce, making a total for this one something a little over $3\frac{1}{2}$ and this one a little under $3\frac{1}{2}$ inch ounces when aligned (indicating).

Q. Will you state whether or not in your opinion Exhibit 5, for identification, in the condition in which it is now presented is a fair illustration of a device built precisely in accordance with the drawings and the disclosures of the reissue patent in suit?

Mr. Flam: I object to that, your Honor, as calling for a conclusion. Your Honor is to determine that.

The Court: That is true, but I don't suppose the inquiry will end with the answer. If it does, it wouldn't give any [374] value. Overruled.

A. I believe it is. We have taken great care, as I have testified, to follow the drawings and the specifications of the patent, and we had a com-

(Testimony of Bertram A. Schwarz.)

petent mechanical engineer supervise the details under my direction, and, for example, we used commercially available gang condensers, we attached them to the tuner shaft by a common means, which is the anti-backlash gears, and in this particular instance we put a scale on here for identification—to determine the relative position of the condenser in each case, and we used what I would call a no-load pointer. In a normal radio set you would need a pointer with a considerably greater load than this one to be satisfactory for commercial use. Most of our automobile radios have a considerable load due to each pointer, and this one does not represent that. Also, this one does not have a manual tuning means, and a manual tuning means will increase the load on the condenser. So, if anything, we are giving this model a considerable advantage over what it would be if commercially used.

I then analyzed some of the reasons for the trouble occurring in this tuner, and these are my observations——

Q. Will you now demonstrate the operation of this model in accordance with the disclosures as you understand them of the patent in suit and state the results of your [375] demonstration?

Mr. Flam: May I see that for a moment? I didn't see it since it was brought back this morning.

(The exhibit was handed to Mr. Flam.)

The Witness: I would like to have the question repeated.

(Testimony of Bertram A. Schwarz.)

(The question referred to was read by the reporter as follows: "Will you now demonstrate the operation of this model in accordance with the disclosures as you understand them of the patent in suit and state the results of your demonstration?")

The Witness: I loosened the thumb-screw on the end of the lever and depressed the lever, bringing the two tappets in contact with the two rockers, and I rotated the tuners to set them to the position desired for the setting of the two tappets. And, let us say, we rotate the one to the position 50 and rotate the other to the position 50, and then we lock up the thumb-screw and release the lever and turn the condensers to other positions and see if our mechanism will now restore the condensers to the position we set them up at (demonstrating). This one has hardly moved, the position is 20 on the right-hand condenser, which might be used for television; and on the left-hand condenser it is 48, which might be used for radio. And these scale figures must be multiplied by 1.8 to bring them to degrees, since it reads from zero to 100, and there is 180 degrees of movement. [376]

The fault here was the lock slipped, the lock was inadequate for the load we have on this tuner, despite the fact that the load does not include manual tuning means, that is, a spinning manual and a brake removal, or a clutch on a manual, nor does it include higher force pointer mechanisms, commonly

(Testimony of Bertram A. Schwarz.)

used in auto radios and in some household radios. Some of the trouble we analyze is due to the multiplication needed in this particular tuner, for I find on measurement that the outer rocker has a total movement of about 25 degrees, and the inner rocker a total movement of about 38 degrees, and the limitation with the gang condensers removed is that the arm here strikes the rocker on the outer one, and the projection of the arm into the inside of the inner rocker strikes the rocker on its limit of movement, and these require a considerable amount of multiplication, in the one case about 7.1 times to move 180 degree gang, in the other case about 4.7 times to move 180 degree gang. And ten years ago gangs other than 180 degrees were very scarce, if at all obtainable. Today the common condenser available without being built into a tuner is 180 degree gang. That high multiplication adds considerably to the force or the work of the tuner. We have found from practical models that tuners which would not tune over an arc of 60 degrees—it wasn't an exact go no-go position, but below 60 degrees or very much below 60 degrees the force required on the tuner [377] was increased quite rapidly, and above 80 degrees the force was increased quite rapidly due to the attack angle of a tappet on the rocker, and due to the friction to the rocker on the tappet. So that we would place the optimum for this type of rocker tuner at somewhere between 60 and 80 degrees. Tuners of this

(Testimony of Bertram A. Schwarz.)

sort which must drive 180-degree gangs, requiring this much multiplication and only 25 or 38 degrees, would not be near optimum in efficiency.

We found that push-button tuners are acceptable to the public if they do not have a push-button force much in excess of $4\frac{1}{2}$ or 5 pounds. And when they are beyond that we get complaints from the field. And that is with a push-button stroke of $\frac{5}{8}$ or $\frac{3}{4}$ of an inch. Any more stroke than that on the tuner is generally not considered as satisfactory as tuners with shorter strokes, because the objective here is to make it like an electric bell button with the minimum amount of work to be done. And I would say that this model, therefore, due to its high step-up and due to its slipping, lock-up, with the particular design of lock-up that we have here, and with this type of mechanism and this type of load, is not commercially satisfactory.

Q. Mr. Schwarz, I am going to ask you to take this individual lever assembly, which corresponds to the assembly on Exhibit 5, for identification, and which individual assembly I will ask be marked Plaintiff's Exhibit 5(1) for [378] identification.

The Court: 5-A. What will it be, Mr. Clerk, 5-A or 5(1)?

The Clerk: 5-A, for identification.

(The instrument referred to was marked Plaintiff's Exhibit 5-A, for identification.)

Q. (By Mr. Lyon): Explain this lever assembly to the court and explain the locking mecha-

(Testimony of Bertram A. Schwarz.)

nism, the type of lock embodied in that assembly, and explain to the court whether or not that type of lock and the presence of the second lever and the thumb screw, and so forth, is dictated by the fact that it is a lever type device rather than a push-button type device?

A. I will again endeavor to do so.

We have the two tappets here positioned on a shaft held by two nuts, and, incidentally, the patent does not dictate the friction, the initial friction imposed by those two nuts, so it could be assumed that no friction is called for. If we have residual friction that might change, a little, the answer, but still it would not make it practical, we don't think. On this tappet is an attached hub, and on this tappet is this attached hub, that spacer in between; this arm consists of a scissor-like movement pivoted at the back and tightened by the thumb-screw at the front, which bears down between the hub of each tappet, this piece here which comes [379] down with a projection, a projection here, which bears at the top of the hub attached to each tappet, and the other portion of the scissor which is fastened to—not fastened, but which bears on the bearing in the center of the two hubs, and as we squeeze those two together like a pincer we squeeze between the top of the hub and the axis, which is this shaft to which the nuts are attached, and that results in the lockup.

If a larger diameter hub were used to get greater

(Testimony of Bertram A. Schwarz.)

holding force, then the rockers would have to expand in size, and if they expanded in size then the angular movement would be still further limited, or the lever would become still longer, and out here the throw would become extremely great, resulting in an extremely large tuner. And I am not sure how far you would have to go before you would begin to get a lock which would hold.

The other alternative is to increase the coefficient of friction by roughening up the surfaces, or by imposing some abrasive like a brake-shoe between this piece and here. I am not sure how far you would have to go in that direction before you would begin to get results. All that would be conjectural.

Mr. Lyon: We offer in evidence the model, Plaintiff's Exhibit 5, for identification, as Plaintiff's Exhibit 5; and the individual lever assembly that goes with the model which [380] has been marked Plaintiff's Exhibit 5-A, for identification, we offer in evidence as Plaintiff's Exhibit 5-A.

Mr. Flam: I object to the offer, your Honor. The Exhibit 5 offered in evidence is not a fair representation of the disclosure of the patent. I doubt very much if it could be maintained that the axis of the tappet will fall in line with the axis of the rocker. The patent teaches that these axes must be coincident or coaxial when the tappet and rocker are brought into position. The use of relatively high torque devices is not prescribed in the patent.

(Testimony of Bertram A. Schwarz.)

The full advantage is taken in the General Motors devices here introduced to reduce the necessary turning force as much as possible, even by using a clutch that declutches the manual knob when the push-button is pushed in. We can demonstrate it, if your Honor would like to have it demonstrated now, how very easily these General Motors condensers do turn. And we will, of course, insist that the use of a condenser which takes that much force to turn and through large multiplication is not a fair exemplar of the disclosure in the patent. Nor is the lock—I haven't measured the relative thickness of the parts that engage. As an example, what can be done in the way of locks——

The Court: Let's not get too confused. Let's talk about one model first.

Mr. Flam: Would your Honor like to see a demonstration [381] of the relative torques?

The Court: I would like to see it demonstrated in your briefs. I am not going to take the time in court to do it.

Mr. Flam: Very well.

The Court: I want it to be understood by receiving the model in evidence that the court is not determining that it is or is not a true characterization of the principles of the patent in suit, but I want the model here and I want you gentlemen to argue in your briefs why you think it isn't, and the other side will, of course, present the phase of it that they contend is, I suppose in conformity. The

(Testimony of Bertram A. Schwarz.)

objection is overruled tentatively, subject to a motion to strike it out in the briefs if the court concludes that it is not a correct model representative of the principles, relevant principles of the patent in suit.

(The instruments, marked heretofore as Plaintiff's Exhibits 5 and 5-A, for identification, were received in evidence.)

The Court: I wanted to ask you a question about the model 5-A, in evidence. Are the measurements of this device the same as those that are shown in Exhibit 5?

The Witness: We have in neither case measured the holding or restraining force of the lock mechanism on the single piece, nor the other, because the patent does not specify anything along that line.

Mr. Lyon: I don't think you quite understood the court's question. The court's question is: Are the parts 5-A exactly the same as the corresponding parts that are included in Exhibit 5?

The Witness: I am sorry. They were made by the same model-maker to the same drawings of the patent, and I am told by the model-maker and by the mechanical engineer supervising it that there was no deviation in the two.

The Court: You did testify about the torque measurement that is found in Exhibit 5 and the torque measurement that you say is utilized by the General Motors in their commercial structure?

(Testimony of Bertram A. Schwarz.)

The Witness: That is right, on the load, that is, the gang condenser. We did not measure the torque of the tuner itself, because we have no guidance on that. The patent does not tell us what the torque should be on the free running torque of the tuner itself.

The Court: That is all I have.

Q. (By Mr. Lyon): I show you defendant's Exhibit H, the Zenith tuner. Can you testify as to why this model tuner was not continued in use in household sets?

I think it is a matter of common knowledge that household sets utilize superheterodyne circuits.

That last statement of mine is correct, isn't it?

A. Yes. [383]

Mr. Flam: Just a moment. I think that calls for a conclusion. I don't know whether the witness knows the answers to this question or on what basis his knowledge——

Mr. Lyons: I will ask him if he knows.

Q. (By Mr. Lyon): Have household sets since 1936 or '35 utilized superheterodyne circuits?

A. Yes, they have utilized superheterodyne circuits.

Mr. Lyon: That is a matter of common knowledge.

Mr. Flam: I didn't understand that part of the question. I am sorry.

The Court: It is generally advertised. I don't know whether it is true or not.

Mr. Flam: That is true enough.

(Testimony of Bertram A. Schwarz.)

The Court: I don't pretend to be a scientist, but I know these advertisements.

Mr. Flam: I misunderstood the question.

Mr. Lyon: I will ask my other question over again and give you an opportunity.

Q. (By Mr. Lyon): Can you testify, based on your own knowledge in the industry and this Zenith tuner like Exhibit H, why tuners of that type did not continue in use in household radios?

A. Yes, I think I can.

Q. Will you please do so?

A. A restraining reason was first the problem in superheterodynes [384] to produce them in mass production. I had in mind spurious responses, things that have nothing to do with the mechanical positioning of shafts, but have to do with producing superheterodynes in the first place. So we had problems like spurious responses, we had problems such as electrical drifts with temperature and humidity, in other words, you tune the radio set, and as the set heated up or after you tuned it it would change to a new position, either due to humidity or temperature, or slight mechanical shock. We had problems of electrically tracking circuits, and that was one restraining reason why no mechanical tuner was considered except for custom-built and higher-priced radios.

The second reason that was advanced to us in the engineering department by sales and management, and we came to the same conclusion was

(Testimony of Bertram A. Schwarz.)

that if we were going to go to the expense of automatic tuning we should first consider the possibility in household sets of providing remote tuning, and remote tuning just about calls for electric tuning of some kind, and that is why electric tuners first appeared and remote tuners appeared in the higher-priced models.

Then the third reason was that it was considered not too important in household to have a tuner which could have the settings changed, because once a set was used in a given locality the settings could be made, and it wasn't too important to change them to new stations. The RCA, Philco, [385] and the Zenith, the three largest manufacturers of household radios, made most of their radios with switch type tuners which were not easily adjusted. They could be set up by the serviceman when installing the set, and they would remain in that position for considerable lengths of time.

The fourth reason advanced was that push-button tuning was of maximum use in an automobile, so that the driver need not divert his attention from the road and could reach over and press a button and bring in a favorite station. But in a household radio if he had to go to the radio set in the first place and tune it, it was almost as easy, they thought, to turn a knob as to push a button. The value of push-button tuning was less.

Q. Can you testify of your own knowledge as to why tuners of the Zenith type, as exemplified in

(Testimony of Bertram A. Schwarz.)

Exhibit H, were not used in automobile radios?

A. The first reason was the limitations of space on the instrument panel. The lever type of tuners require a considerable movement of the lever, they therefore require distances such as shown in this tuner, in addition to the speaker, and in addition to a dial, and to show how serious that limitation was we devised an elliptical speaker, elliptical shape, to try to reduce the height of the instrument panel so that they would have plenty of knee room in a car. A car designer is very reluctant to give up that room. [386] Therefore a lever type didn't work out very well from a size and space standpoint.

Secondly, we submitted to our various customers three types of operation: one, a lever, another a pull type, and a third, a push type. And the customers chose the push type as being most commercially salable. They preferred that type for automobile and commercial use.

In testifying to that I was thinking, also, of Plaintiff's Exhibit 1, which has hinged buttons on there, and there might be some confusion as to my testimony on that, for those hinged buttons were for a different purpose. They were not levers to which tappets were attached, and they did not have the disadvantages of this type of operating lever (demonstrating). They were put there hinged merely to allow the button to be flipped up and to get at the reset screw. And they had an ornamental

(Testimony of Bertram A. Schwarz.)

purpose, and utilitarian, insofar as not having to pull off a button to get to a reset screw, if you wanted square or rectangular buttons.

Continuing with this (indicating), we then took the Schaffer tuner, which was available to us on RCA patents, and modified it and made it a rectilinear push-button type as exemplified by Plaintiff's Exhibit——

Q. 3?

A. 3, and used that in great quantities on Buick and Chevrolet for many years, and it was a modification of this [387] to make it most adaptable to automobile use.

Q. Beginning at page 319 you testified with reference to the type of automobile tuners being used on automobiles supplied from the manufacturer at this time. First you said that the Chrysler models were using a switch type tuner. You modified that this morning by saying that there are some tuners being supplied by another manufacturer you are not familiar with. But as to those that you are familiar with, will you state whether or not they require any more difficulty in adjusting or setting for different stations than a tuner like the adjustable tappet and rocker type.

A. The Chrysler switch type tuners are quite easily adjusted by removing a button cap and turning a station setting screw that is then disclosed, tuning in the station on each of the buttons. That seems a rather simple operation.

(Testimony of Bertram A. Schwarz.)

Am I understanding the question correctly? Does it go beyond the Chrysler?

Q. It includes the Chrysler models here. Would your answer be the same—I mean it includes in my question the feature that the center for the tappet is coaxial with the center for the rocker in this type that you are comparing the switch type to. In other words, when I am speaking of this type for the purpose of this question, of an adjustable tappet and rocker, I intend to include in that type that the [388] centers will be coaxial.

A. The comparison between the two, it is difficult to say. I would think the switch type was as readily adjusted as a rocker and tappet with coaxial centers.

Q. Can you answer the same question as to the current Ford type referred to on page 319 of the record?

A. The current Ford type may require a little explanation, but I believe it is a very simple setup. It has an advancing nut, as I think I have testified, and a spring loaded bar, and the advancing nut setup arrangement is according to the teachings of Marvin. I did not testify to the fact that the Ford and that type of tuner is what is known as a single push-button sequence tuner with a turret. In other words, there is only one push-button on the instrument panel, and as you continue to push it you get a sequence of stations, and it continues to rotate around a turret, and on that turret are adjustable

(Testimony of Bertram A. Schwarz.)

nuts and screws. One at a time is brought into relationship to the tuner bar. The nut which happens to be against the tuner bar at the moment can be set up by pulling out the manual, I believe it is pulling out—it could be push-in—but I think it is pull-out on the Ford, and thus engaging the manual with the screw and adjustable nut, and you rotate the nut, changing its position and thereby changing the position of the tuning bar. In other words, you tune the station in on each button [389] position. If you want to set it to another position you press the button to that position, until that position is reached, and again pull out the manual, rotate it, setting up the station.

Q. How does the ease of adjustability or set-ability of that device compare with the tappet and rocker with coaxial center type of device?

A. I think it is at least as easy and perhaps easier than the type which requires rotating unlock and rotating lock of tappet adjustment.

Q. Can you answer the same question with reference to the Packard type of tuner referred to by you at page 320 of the record?

A. The Packard type of tuner is the same general principle of the Ford but is a little easier to explain, but no more difficult to set up.

Q. Can you answer the same question with reference to the type of—I think you have already stated that the Kaiser-Frazer is the same as the Ford?

A. Yes, the Kaiser-Frazer and the Nash is the

(Testimony of Bertram A. Schwarz.)

same as the Ford, and the Studebaker is the same as the Packard.

Mr. Lyon: At this time I would like to offer in evidence as Plaintiff's Exhibit No. 6 the accused tuner which was filed with the complaint as Exhibit 1 to the complaint.

The Court: So ordered. [390]

The Clerk: Plaintiff's Exhibit No. 6 in evidence.

Mr. Flam: Did that have a defendant's number?

The Clerk: No.

(The instrument referred to was marked Plaintiff's Exhibit No. 6, and was received in evidence.)

Mr. Lyon: I would like to offer in evidence as Plaintiff's Exhibit No. 7 the tuner filed with the complaint as Exhibit No. 2 to the complaint.

The Court: It is so ordered.

The Clerk: Plaintiff's Exhibit 7 in evidence.

(The instrument referred to was marked Plaintiff's Exhibit No. 7, and was received in evidence.)

Mr. Lyon: You may cross-examine.

Cross-Examination

By Mr. Flam:

Q. You were talking today and Thursday about a switching type of tuner for automobile radios.

A. Yes.

Q. I think you said that the switching type does

(Testimony of Bertram A. Schwarz.)

not use the feature of coaxiality referred to in the Leishman patent?

A. That is my interpretation of it.

Q. There isn't any tappet or rocker in the switching type of tuner, is there?

A. Not that I would classify as a tappet or rocker. [391]

Q. In order to explain your testimony about switching type of tuners——

The Court: Is that a new one or is that one we have had?

Mr. Flam: This is a switching type of tuner, I believe. I would like to show that to the witness and ask him whether he recognizes it as such.

The Witness: Yes, I believe this would be a switching type of tuner.

Q. (By Mr. Flam): Will you explain that to the court while you have it in your hands?

A. Let me get my glasses on to see the details.

Each of the push-buttons latch in, holding them in position, which of course is not necessary in the normal rocker and tappet type of tuner. They, therefore, hold in switch contacts. Let me see if I can locate the switch contacts.

Q. Aren't the switch contacts——

A. Right here, those springs here. And there is another bank of them here. The switch arm, therefore, throws this switch onto this bar, bringing in any one of pairs of trimmers in this case, these are fixed or previously-adjusted banks of tuning con-

(Testimony of Bertram A. Schwarz.)

densers; whichever one is thrown, therefore—I now bring these two condensers into the circuit, and they are set up on a station (demonstrating).

Q. (By Mr. Flam): Then, as I understand your testimony, [392] in the switch type of tuner all you do is to switch in pre-tuned circuits, one circuit at a time, depending upon which push-button you push, is that right?

A. That is correct.

Q. But there is no tappet and rocker——

A. There is no tappet and rocker that I could determine as such.

Q. Each button is like any other button, isn't it, all it does is to close contact?

A. That could be, yes.

The Court: Do you think that principle of co-axiality is present in that?

The Witness: No, I don't see how that could be considered to be present in that tuner.

Mr. Flam: I offer this exemplar of the switch type of tuner in evidence.

The Court: It will be received.

Mr. Lyon: No objection.

The Clerk: Defendant's Exhibit ZZ in evidence.

(The instrument referred to was marked Defendant's Exhibit ZZ, and was received in evidence.)

Q. (By Mr. Flam): I think you mentioned the Marvin tuner shown in patent 1,704,754, which I

(Testimony of Bertram A. Schwarz.)

think is No. 3 in our book. Do you have a copy of that?

A. I did mention a Marvin tuner. I haven't the number [393] before me to refer to. My recollection is that I referred to a figure 9. I don't find a figure 9 in this, but it seems to be the one.

The Court: It is down in the corner.

The Witness: This seems to be the same one. I would say this was the mechanism I had reference to.

Q. (By Mr. Flam): Do you find that patent, Mr. Schwarz?

A. No, I have not, yet. Does it have an index number reference here?

Q. Yes, on the first page. Do you believe there is another Marvin patent?

A. Only that my recollection told me that there was a figure 9. I may be wrong in that. I don't see the figure 9 here, but this seems to be the same general type of mechanism that I testified to and that I have reference to.

Q. Isn't that the same patent that Mr. Lyon showed you when you were testifying on direct?

A. That is the point I am not sure about, but the figure seems to cover the same general setup mechanism arrangement, yes.

Q. Is that the type of device that General Motors had been supplying to various automobile manufacturers?

A. As I testified, I believe this has been sup-

(Testimony of Bertram A. Schwarz.)

plied, or this type of lock-up mechanism was supplied to United Motors, Chevrolet, Oldsmobile and Cadillac. [394]

Q. Isn't it true that in this type of tuner there isn't a rocker and a tappet that engages both arms of the rocker?

A. That is true. There is only a single rocker, as I think I so testified. There is a single bar, rather. Whether you would call it a rocker, or not, I don't know.

Q. I call your attention to Figure 2 of the patent on sheet 1 of the drawings; do you notice the links 42 and 43? A. Yes.

Q. Were those the type of links that you used in the Marvin tuners that were furnished?

A. No. I tried to make it clear that the main thing was the advancing nut and the screw.

Q. Isn't there an advancing nut and screw?

A. Advancing nut or screw. In this case it is an advancing nut. We did not use the linkage arms shown.

Q. You eliminated the linkage arms?

A. Yes.

Q. And the advancing nut or screw would be adjusted to a definite point?

A. That's right.

Q. To determine which particular position the tuning device was to be set to, is that right?

A. That is correct. [395]

Q. And that nut would do what to determine that position?

(Testimony of Bertram A. Schwarz.)

A. The nut would advance or retard. It would change its——

Q. Would it move an arm against a spring, is that the way it would behave?

A. No. As you depressed the assembly consisting of the screw and the nut, the nut would then come in contact with a spring loaded bar in our particular tuner, and the distance back or forward that the nut was, or the distance back or forward that the screw was, if it was reversed, would determine the angular setting or would determine the distance in or out of the iron core tuning——

Q. There wouldn't be any problem involving coaxiality or non-coaxiality?

A. It doesn't involve coaxiality at all.

Q. How about this spring? You say that the bar or arm is urged to one position by the loading spring, is that what you said?

A. We have termed it a spring loaded bar, the bar doing the tuning.

Q. And that spring loading the bar adds to the resistance to turning of the tuner, doesn't it?

A. That is correct. [396]

Q. I hand you a tuner and ask you whether that embodies the principles that we have been discussing, the rocker and tappet which become coaxial when the plunger is moved to the fully engaged position?

A. Looking at it by eye I would say that the center of the tappet was not coaxial with the rocker but I wouldn't know that without measurements.

(Testimony of Bertram A. Schwarz.)

I refer to the center of that rivet holding the tap-pet to the arm. The center of that rivet looks to me as if it was not in line with the center of the rocker here and here.

Mr. Lyon: May we have the device identified that the witness has referred to?

Mr. Flam: Oh, yes. This is the Colonial tuner that has been used and is being supplied for use on standard Hudson cars.

Mr. Lyon: I didn't mean that.

The Court: He means to mark it for identification.

Mr. Flam: I will have it marked for identification first, your Honor.

The Court: Did I understand you to say, Mr. Schwarz, that you did not find the coaxial properties in the exhibit that is now marked for identification?

The Witness: As I see it by eye I would have to—you would have to measure it to be sure whether it departs and how much it departs from coaxiality. But it appears to [397] me to be a departure from coaxiality.

The Court: Is there any fixed definition as to what is meant to be engineers by "coaxiality"? Is it defined with precision from an engineering standpoint or is there any variance?

The Witness: I wouldn't know how to define it, your Honor, because there has to be manufacturing tolerances, but I would expect those to be in thousandths. If I could see it to the degree that it

(Testimony of Bertram A. Schwarz.)

appears to be off center I would think it is more than a few thousandths.

The Court: Well, in the utilitarian aspect of the radio is it necessary to have the tuning device actuated with the nicety of a one-thousandths clearance?

The Witness: If other aspects are taken care of greater and greater the departure can be had of any one aspect and that includes coaxiality. In other words, if we took care of excellent plunger fit or had light loads or had other characteristics in the tuner then we can take other things in our stride.

I don't know how to say how important coaxiality is. I think it is a good feature but as I think I testified I don't think it is a major one.

The Clerk: Defendant's Exhibit AAA marked for identification.

(The document referred to was marked Defendant's Exhibit AAA for identification.)

Q. (By Mr. Flam): Now, Mr. Schwarz, I want to call your attention to the location of the pivot for the rocker. It is on this side over here?

A. That is one and the other is a screw over here that I was looking at. It is right here—the center of the screw. I was trying to line them up by eye and that is a little difficult to do but lining them up by eye with the center of the rivet head which holds the tappet under the plunger, it appears to me that they are not coaxial, but that is purely a guess without measuring equipment.

(Testimony of Bertram A. Schwarz.)

Q. Can you look at it again and see whether as a matter of fact those two parts become substantially coaxial?

A. In other words—"substantial" is a difficult one.

Q. Or coaxial?

The Court: "Substantial."

Mr. Lyon: Judge Tuttle, when I was trying a case before him and the word "substantial" came up, he said:

"I am 73 years old."

He said:

"When I was born I didn't know what the word 'substantial' meant and I don't know now and I don't believe I am ever going to find out."

The Court: I thought maybe Mr. Schwarz could tell us but I see he can't.

Q. (By Mr. Flam): In your opinion? [399]

A. All I could say is that it comes close but by that definition, if that is usable——

The Court: Do you think it is coaxial, Mr. Flam?

Mr. Flam: I think it is coaxial to the extent required by the teaching of the patent. I think we can make measurements and I propose to do so and show that it is—that it is very close to coaxiality. Of course we could use the test we have been talking about over here with the tappet loosened and turning the rocker. You don't notice any rise or fall of it.

A. Can I ask a counter-question? I don't know whether this is the correct procedure but it seems

(Testimony of Bertram A. Schwarz.)

to me even with coaxiality if you had any eccentric in the tappets or the rocker bars on one side or on the other you would get movement the same way. I don't think it is an infallible test.

Q. (By Mr. Flam): Well, I guess then we shouldn't ask you to apply the test. Do you recognize this tuner, Exhibit AAA as a tuner used in the current model of the Chrysler cars?

A. No, I cannot, because I have never seen those models of the Chrysler cars.

Q. That is the Plymouth and DeSoto lines.

A. No, I don't know where it is used or how much it is used. [400]

Mr. Lyon: If you say it is I am willing to accept it without proof because it is a matter of common knowledge to somebody and we don't need to have witnesses to prove it.

Mr. Flam: We are prepared to prove that that particular model—I have a circular of the so-called Mopar radio which describes the same tuner, I believe, and it is stated as used for the current series and 1941 and 1942 Plymouth, Dodge DeSoto, Chrysler passenger cars and also the Dodge trucks, and the Mopar radio identified there we have found is the radio—the tuner of that radio is this type of tuner made by the Colonial people.

Mr. Lyon: I am willing to accept all of that without any proof if it is understood that the circular doesn't mean that all——

Mr. Flam: No, no.

(Testimony of Bertram A. Schwarz.)

Mr. Lyon: All Plymouth, Dodge, DeSoto, Chrysler and so forth had that equipment as of that date.

Mr. Flam: No, I am not alleging that.

Mr. Lyon: You just mean that some of those have been put on those models and that is as far as the fact goes, I think.

Mr. Flam: Well, of course there is no saying about what the proportions are one way or the other. I wouldn't be prepared to prove that unless I subpoenaed some records from Detroit. [401]

Mr. Lyon: I am willing to accept the circular without proof with the understanding that it is to be interpreted in the way we have just stated, your Honor, on the particular point that we have just discussed.

Mr. Flam: I will offer it in evidence, Defendant's Exhibit AAA for identification and also the circular that has been discussed.

The Court: It will be received and marked filed.

(The documents referred to were marked Defendant's Exhibits AAA and BBB and received in evidence.)

Q. (By Mr. Flam): Now, Mr. Lyon, I understand that this tuner I have in my hand now is in current use on Hudson automobiles and some of the Mercury, Lincoln and Ford and Ford truck models as well as some of the Nash models and Willys and Crosley. Are you willing to stipulate the same for this particular tuner?

(Testimony of Bertram A. Schwarz.)

Mr. Lyon: If you show it to the witness and ask him if he knows anything to the contrary.

(Handing object to the witness.)

The Witness: I have never seen this tuner before and I was not certain what type of tuner Hudson was using. I knew the Hudson in 1947 but I didn't know the Hudson in 1948. The one in 1947 was the same as the Ford. The new Ford I don't believe is out yet and therefore I could not state what the new Ford is. [402]

The new Mercury and the new Lincoln I know have changed the tuner. What the tuner is I have not had an opportunity to find out yet. I have studied the old tuner quite thoroughly and this is not it. The old Nash I studied quite thoroughly. The new Nash I have no indication whether or not they have changed.

Mr. Lyon: What is the old Nash type?

The Witness: The old Nash type was the same as the old Ford which was the one I think I testified to, was the single button sequence tuner with the advancing nut and spring loaded bar.

Mr. Lyon: If you have some printed matter here that is reliable it will be all right. We don't want you to go to a lot of proof on things that can be found to be true in other ways.

Mr. Flam: That tuner, your Honor, is referred to in manuals, service manuals for Hudson automobiles—the receivers of current type and I have

(Testimony of Bertram A. Schwarz.)

a photograph of the page from the manual showing that tuner.

Mr. Lyon: May I have a copy of that?

Mr. Flam: I think we have copies but we will need to use this one. We can supply you with a copy.

And here are photographic copies of pages for the Ford truck manual, which shows the same tuner with the associated radio set. And when I say "associated" I mean [403] associated without capitalizing it.

Mr. Lyon: What does it mean?

Mr. Flam: I mean the Zenith radio and not the Associated wholesale case.

Mr. Lyon: May we take these up one at a time and dispose of them one at a time?

Mr. Flam: All right. Do you want to dispose of the first one I showed you?

Mr. Lyon: The first one is the manual for the Hudson car and the specimen of the Hudson tuner. Are you prepared to say to what extent these are used on the Hudson cars or is the understanding to be that they are just used to some extent on the Hudson car?

Mr. Flam: They are used on Hudson cars. That is the way I would say it without precluding the possibility that there may be other tuners used in connection with Hudson cars.

Mr. Lyon: That is all right. I will agree to that and waive proof of the model and of the catalog.

(Testimony of Bertram A. Schwarz.)

The Court: It may be marked accordingly, Mr. Clerk.

Mr. Flam: Now, you have the Ford truck. The same situation obtains there.

Mr. Lyon: Is that the same tuner?

Mr. Flam: Yes; you can see the pictures on the pages of the manual. [404]

Mr. Lyon: The understanding is the same, that some of these tuners are used on the Ford trucks without excluding the possibility of other tuners.

Mr. Flam: Yes. Of course as far as we know these are the only kind—

Mr. Lyon: We don't know whether they are or are not. I am willing to waive any proof of the Zenith manual, your Honor. I think these ought to be given identification numbers as we go along.

Mr. Flam: I offer the three pages, referring to the Hudson car and—two pages and the photograph in evidence.

The Court: It will be received and marked filed.

The Clerk: Defendant's Exhibit CCC in evidence.

(The documents referred to were marked Defendant's Exhibit CCC and received in evidence.) [405]

Mr. Flam: I offer the three sheets, photographic copies of the service manual for Zenith auto radio for Ford trucks.

The Court: It will be received and marked filed.

(Testimony of Bertram A. Schwarz.)

(The documents referred to were marked Defendant's Exhibit DDD, and were received in evidence.)

Mr. Lyon: Are these factory equipped or just models that are being sold?

Mr. Flam: No, I understand they are factory equipped.

Mr. Lyon: Mr. Flam has shown me the Zenith Service Manual which says for Lincoln and Mercury cars, part numbers so and so, and I will waive any proof of this manual with the same understanding that these devices have been put on Lincoln and Mercury cars but not excluding the fact that other types of tuners may have been used on the same cars.

Mr. Flam: Very well. I will offer the two pages relating to the service manual for Zenith auto radios for Lincoln and Mercury cars.

The Court: It will be received and marked filed.

(The document referred to was marked Defendant's Exhibit EEE, and was received in evidence.)

These are really duplicates are they not? I don't know whether the verbiage is the same but the drawings seem to be the same.

Mr. Flam: The drawings are duplicates showing that this [406] same tuner has been used in these cars that I mentioned.

I have at hand a photostatic copy of a letter or

(Testimony of Bertram A. Schwarz.)

circular having the Zenith radio Corporation letter-head and relating to the Zenith automobile radio service bulletin No. 5. This is dated May 1st, 1948. I would like to offer that in evidence if opposing counsel will stipulate that we can waive proof of the original.

Mr. Lyon: This is just a sales letter issued on March 1st, 1948, by the Zenith Radio Corporation.

Mr. Flam: It is not a sales letter. It is a service bulletin. That is what it is entitled.

Mr. Lyon: Bulletin No. 5.

Mr. Flam: That is right.

Mr. Lyon: Of the Zenith Radio Corporation. We will stipulate to it as being a bulletin that was issued on the date appearing on the bulletin by the Zenith Radio Corporation, your Honor.

Mr. Flam: I offer the photographic copy in evidence.

The Court: In other words, the authenticity of it is waived.

Mr. Lyon: Yes.

The Court: And that it was regularly issued?

Mr. Lyon: Yes.

The Court: So ordered.

(The document referred to was marked Defendant's Exhibit FFF, and was received in evidence.) [407]

Mr. Flam: Will you state that this is the tuner described in the circular?

(Testimony of Bertram A. Schwarz.)

Mr. Lyon: Is this the Zenith set shown in the Zenith bulletin?

Mr. Flam: I offer in evidence an exemplar of the Zenith tuning mechanism corresponding to the tuning mechanism referred to in the several bulletins just offered and received in evidence.

The Court: Any objection, Mr. Lyon?

Mr. Lyon: You are offering in evidence this model that you just handed to me?

Mr. Flam: Yes.

Mr. Lyon: As a specimen of the models referred to in the Zenith service manuals that are here in evidence?

Mr. Flam: Yes.

The Court: As an exemplar?

Mr. Lyon: Yes. We have no objection and understand that is what the model is, your Honor.

The Court: It will be received and marked filed.

(The document referred to was marked Defendant's Exhibit GGG, and was received in evidence.)

Q. (By Mr. Flam): Mr. Schwarz, will you examine this tuner, Exhibit No. GGG, and state whether in your opinion the tappet and rocker becomes coaxial in the fully engaged position, having due regard to the position of the shaft upon [408] which the rocker is mounted?

A. This looks to be closer than the other tuner that you showed me—the Colonial tuner, I believe it was. I would say that it is closer to being coaxial.

(Testimony of Bertram A. Schwarz.)

Mr. Lyon: May I ask a question, Mr. Flam? We are talking about being coaxial here. Are we talking about this pivot of the tappet being coaxial with the center around which the two bars of the rocker turn or around some other pivot out here at the side which may not coincide with that center?

The Witness: I have been lining it up with the pivot of the assembly of the rocker but as pointed out, that is not a conclusive proof that the pivot is necessarily a point centered on the two bars or whether it is on the two edges of the bars.

Mr. Lyon: This point did not come up before in connection with this and brought to your Honor's attention. In other words, the center between the two bars is not, apparently, the pivot on which the rocker is mounted and I don't know as to which the witness is answering. I don't know whether he noticed that.

The Witness: I had not considered that. I was thinking in terms of the pivot point of the assembly of the two bars rather than the centers of the two bars, or, rather, than the top of the two bars. I hadn't paid any attention [409] to the position of the two bars relative to the pivot of the assembly of the rocker.

Q. (By Mr. Flam): Now, I think to clarify that, when we talk about "Coaxial parts" in a rocker and tappet assembly we have meant right along that the axis of rotation of the rocker be considered irrespective of the shape of the rocker

(Testimony of Bertram A. Schwarz.)

itself and with that axis of rotation of the rocker in mind, can you now say whether the axis of the tappet will be in line with the axis of rotation of the rocker?

A. It appears to be quite close if not actually coaxial with the center of rotation of the assembly of the rocker.

Q. Now, I show you again this other model, Exhibit AAA in evidence. I think that is the Colonial tuner. And with that understanding in mind that you are to refer to the axis of rotation of the rocker, can you now state better whether in your opinion that is coaxial when the tappet and rocker are in full engagement?

A. It doesn't help me because that is the way I was looking at it before and it still seems to be somewhat farther apart than the other tuner by eye.

Q. You have testified about plaintiff's exhibit 3. I think you said that this was one of the first tuners that was developed as distinguished from a motor-driven tuner.

Mr. Lyon: Can he look at Exhibit 3 to be sure, Mr. Flam? [410]

(Object handed to the witness.)

The Witness: If I recollect, my testimony had reference to the automobile use of tuners and I testified that this was one of the first. I couldn't testify as to what was the first mechanical push button tuner used in automobile radios.

(Testimony of Bertram A. Schwarz.)

Q. (By Mr. Flam): Well, aren't you aware of the fact that this—I will rephrase the question. Isn't it a fact that this tuner, Exhibit 3, did not go into production until July of 1938?

A. That is correct.

Q. When did you first get the idea of developing a push button tuner?

A. We started work on this in the latter part of 1936 or the first part of 1937, on the idea of mechanical push button tuners and electrical push buttons for automobile radios.

Q. Now, I think Mr. Lyon asked you for some idea as to how many tuners of the Exhibit 3 type before you, were produced by General Motors. Can you recall the figures you gave.

A. I said there was about 100,000 produced per year for Buick and a similar quantity for Chevrolet, and I recollected that the Buick tuner was in use for two, going on three—that is a part of 1940 model. It went into production in 1938 and was used in 1939 and at least a part [411] of 1940 at Buick, and it was used on Chevrolet during most, if not all, of that period of time, and I would place the total quantity, therefore, as 400,000 to 500,000 tuners.

I have not the figures before me but it is of that order of magnitude.

Q. Now, I think Mr. Lyon also asked you about the amount of or the quantity of tuners of the Marvin type with the advancing nut that you just

(Testimony of Bertram A. Schwarz.)

talked about a little while ago. How many of those were sold by General Motors?

A. I don't recall the quantity. We used them on all of the Oldsmobile—all of our Oldsmobiles and all of our Cadillac tuners in 1941, '42 and 1946 and 1947. We used them also on the United Motors tuners in 1941, or 1939 to 1942. That total quantity, I would say—I would have to do some very quick estimating—let me think. All I could say it was over 100,000 and there could have been 200,000 or 250,000.

Q. Showing you Exhibit LL, how many of these tuners did General Motors make?

A. We didn't make any of this tuner that you hand me here. This tuner was bought in its entirety except possibly for the lock-up screw put on here and some other attachment on the outside. This gang tuner was purchased from two sources before the war and one source after the war.

Q. How many of them were actually used by General [412] Motors? I will put it that way.

A. By General Motors? It would include tuners of this same type supplied by R. C. A. to Buick and that figure I haven't before me. The ones we supplied, we supplied in the latter part of 1940, 1941, 1942 and the beginning of 1946 for Buick. That would place it at over 200,000 for the Buick. And then we had tuners used up to now and it is continuing in Pontiac—in our Pontiac DeLuxe set, and we used that in the years 1941, 1942; 1946 and 1947, and continuing in 1948. The Pontiac quanti-

(Testimony of Bertram A. Schwarz.)

ties I do not have before me but I might guess them to be in the order of 50,000 a year during those years. Let me see, that is 1941, 1942, and 1946 and 1947. There would be over 200,000 there.

Q. What other cars were they provided for? Were they all for Buick and Pontiacs?

A. We used it for a short period of time—I am not sure of that. Those are the only two that I can testify to with certainty.

Q. Now, the General Motors tuner, Exhibit JJ in evidence, can you state how many of those were sold by General Motors?

A. We put this on our Chevrolet in 1941, I believe it was, and we continued in 1941, 1942, 1946, 1947, and we are continuing it in 1948 on the Chevrolet. That is the Chevrolet DeLuxe. It is not used in the Chevrolet truck. [413] In the Chevrolet DeLuxe it would be something more than 100,000 a year during those years of 1941 and 1942. That would be 400,000—more than 400,000. And in 1946—I am sorry—in 1946 the Buick was changed from a condenser—I mean this type to this type. I am not sure but what I included the condenser tuner for Buick. That should have been this model.

The Court: Please refer to them by exhibit number.

The Witness: I am sorry. Exhibit LL, Defendant's Exhibit LL I refer to as the condenser tuner used on the Buick and Pontiac and I in error continued to consider the figures of usage of tuner

(Testimony of Bertram A. Schwarz.)

LL at Buick in 1947, whereas, actually, in 1946 the change was made at Buick to a tuner exemplified by Defendant's Exhibit JJ.

Mr. Lyon: I am not sure, your Honor, whether the record is clear as to these figures. I don't know whether the record shows that these are the tuners which the witness' division has manufactured that he is speaking of or whether they are tuners that the General Motors Corporation has used of this type and have purchased elsewhere, because in view of some of these other decisions many of these tuners are supplied by Radio Condenser and General Instrument Company.

Mr. Flam: Maybe I had better inquire again, Mr. Schwarz, and let us keep the record straight.

Q. (By Mr. Flam): I will ask you now, first, about [414] Exhibit LL. This shows a tuner that I think you said was supplied by Radio Condenser?

A. And General Instrument, both of them.

Q. And this model, LL, shows a condenser, variable condenser that is operated by the tuning device?

A. Yes.

Q. Now, without regard to whether a condenser or a permeability tuning is used, how many of this type of tuner was purchased and used by General Motors?

A. That clarifies it in my mind because I was wrong in some testimony on the Exhibit JJ.

Q. Go ahead with reference to LL.

A. Reviewing the testimony on Exhibit LL,

(Testimony of Bertram A. Schwarz.)

tuner LL with a condenser or the iron core version——

Q. Or any other type for that matter.

A. Those were the only two that were used. I can only testify as to those which were put in the Delco Radio Division sets. I cannot testify to those which were put in by the Radio Corporation or any other supplier to the corporation.

But returning to the testimony I can give on Delco Radio, Delco Radio used this tuner in condenser or iron core form——

Mr. Lyon: When you say “used this tuner,” you mean they manufactured it or bought it from Radio Condenser and General [415] Instrument?

The Witness: They were bought as the condenser version or they were bought as the iron core version. It is difficult to say where the break-off comes. We made more of them as we went along.

Q. (By Mr. Flam): So far as the plunger part is concerned weren't they all bought from the same source?

A. As far as the plunger mechanism is concerned, we finally wound up by making the entire tuner ourselves but that came in 1946.

Q. Now, irrespective of whether you made it or whether it was sold to Delco, how many of those tuning devices were employed in sets sold by Delco?

A. I would have to study that for a moment. They were used in the Buick, Pontiac and the Chevrolet—the Buick beginning late in 1941 and the Chevrolet in 1941 and the Pontiac, I believe in

(Testimony of Bertram A. Schwarz.)

1941, and they were continued up to the present time and they are being continued during the 1948 model year. I would place the quantity in those three-car divisions of this tuner, whether we bought it or made it, whether condenser tuned or iron core tuned at, I would say the figure might be about one million tuners.

Q. Now with regard to the tuner mechanism shown in Exhibit JJ and without regard to whether it was used for adjusting condensers or for permeability tuning, how many [416] of such tuners were manufactured and sold by Delco?

A. Until 1948 it was only used on the Chevrolet truck. The Chevrolet truck quantities I don't know. I think they might be twenty to thirty thousand in 1947. They are being used this year and I wouldn't know the break-off point but they started in production at Oldsmobile and at Cadillac in addition to continuance on the Chevrolet truck.

Q. And what are the manufacturing schedules, do you know, as to quantities?

A. The 1948 model year is expected to be a short one and I think it might be of the order of 125,000 of these this year plus 20 to 30 thousand last year. That is conjectural because I don't know whether the schedules will be maintained.

Q. Then isn't it true that the tuner employing the coaxial rocker and tappets have been used in far larger numbers by General Motors than all the other types of automobile tuners combined that they have made?

(Testimony of Bertram A. Schwarz.)

A. I believe the figures I have just given would testify to that.

Q. I show you Exhibit E, which is known as the Marschalk tuner. Now, can you go through the process of adjusting that tappet mounted on the lever in that tuner?

A. I have never seen this tuner before so I would be at a disadvantage to operate it for the first time.

Q. You have heard the testimony about it. Did you see Mr. Leishman demonstrate how it was adjusted?

A. I heard some of the testimony. I didn't pay a great deal of attention to it. I would have to review that.

Mr. Lyon: The witness was not here the first day of the trial, I believe, and I don't think it is proper cross-examination. He wasn't examined about this model or about the device that that model represents.

The Court: Not unless he has an opportunity to look it over and carefully inspect it.

Q. (By Mr. Flam): Mr. Schwarz, in this Marschalk model, Exhibit E, a rotatable rocker is shown and a weighted lever. Mounted on the lever is a tappet pivoted on a pin. The mode of operation once the tappet is tightened, you will recognize, is quite similar to the mode of operation of these other tuners. Do you see that?

A. Yes, I can see that.

Q. Now, when it comes to the operation of adjusting the tappet to the position of the rocker

(Testimony of Bertram A. Schwarz.)

do you think you can now try to adjust that tappet to correspond to the position of the rocker and demonstrate that to the court?

A. I would like to try that first and see what the problems are. Immediately one thing becomes evident to me and that is that there is no restraining means and I only have two hands and I have to hold the lever down and try to [418] restrain the rocker at the same time. Would that be a fair representation of the method in which it would be used?

Q. Could you with care?

A. If I had a third hand I might be able to hold the rocker and push the button down.

Q. You are pressing very firmly upon the end of the lever, are you not?

A. Well, I don't think any more firmly than I would normally do with any tuner.

Q. You would have to use that much pressure to set the tappet properly, is that right?

A. I don't know that I am using any more than I would use with a normal tappet tuner. I am now trying to restrain the rocker, hold the button down and lock up at the same time.

Q. Well, in other words, if you had to take care about using very little pressure on the lever that would not be a very satisfactory way of adjusting the tappet, would it?

Mr. Lyon: I don't understand that question, your Honor. The witness has not said he has done anything abnormal in trying to set this exhibit that is before him.

(Testimony of Bertram A. Schwarz.)

The Witness: It is perfectly free and there is no restraint on that and therefore I am trying to give it restraint that a load would give and at the same time pull the lever down and at the same time lock it. It makes it a [419] little bit more difficult to evaluate the usefulness of the tuner without measurements. Offhand it looks like it is a workable device but offhand I would have to make measurements to see how workable and how accurate. I wouldn't be able to say from this kind of a test how bad or how good it was. [420]

Q. When you adjust the tappet in one of the General Motors type of tuners, the plunger is pushed in with considerable force to cause the tappet to assume the position of the rocker, isn't that right?

A. Again the word "considerable" comes into play. We put a residual force on all tappets anyway, and this doesn't have any, so that it doesn't flop around too easily. In other words, if you should back away a little bit while you were tightening it up the tappet could be expected to retain the position that you set it. In this device I have to be sure that I am keeping it in contact, as it is built here, in contact with the treadle. I am not sure whether that is giving it its due or not.

Q. Supposing we do this, loosen the tappet, adjust the rocker to the position required, and then very carefully try to bring the tappet into contact with the rocker and no more (demonstrating), even there you saw that the rocker traveled a little.

(Testimony of Bertram A. Schwarz.)

A. That isn't fair. There is no load at all on that rocker. That rocker just flops around. I wouldn't want to build any tuner to any specifications and expect it to do that. Certainly not a production tuner. I don't know how well-built that is. I wouldn't expect that to be possible with any tuner. Our experience has shown that we have to apply restraint on this, while you are doing it. Even with the greatest care we still have complaints about accuracy of [421] tuners.

Q. How much restraint, do you know, exactly?

A. I don't, no. We would like to see people do a two-handed setup, manually tune while they are setting, unless you use the Marvin type which always uses a single setup. The Marvin sets up on each screw. But whether or not you can get people to do that, I don't know. If you don't do that, then you certainly want to be sure that they restrain this thing and well-bottom the job before they do tighten it.

Q. In this Exhibit JJ, can you demonstrate how that tappet is adjusted in connection with the rocker?

A. This Exhibit JJ is not complete. It doesn't have the restraining force of the worm drive. It has a worm drive, which I think I have testified to as being irreversible. It has a mechanically-operated clutch in this case, and a mechanically-operated clutch is disabled during the tuning stroke—I should say the setting-up stroke—for just the reason I have mentioned. In other words, as we

(Testimony of Bertram A. Schwarz.)

pull out the push-button to be operated, this finger does not contact the clutch-operating bar, as you push it in. It won't operate that clutch-operating bar. And the worm drive remains as a restraint on the treadle bar. As you push it in, push it home, it sets itself first on here, and then begins to lock up, then she operates the clutch, and as you [422] operate the clutch normally it disengages the worm. We have considered that a very important feature. No matter what tuner we have we feel that it is important to restrain that bar, or to retain control of that bar during set-up of the tappet, whether you have coaxiality or not.

Q. Have you made any measurements of the torque in inch ounces that would be required to move that rocker?

A. I haven't them before me, but I know we have gone through that very carefully.

Q. Here is Plaintiff's Exhibit 6 in evidence. Can you demonstrate the extent of the restraint on the rocker when this device is being adjusted?

A. Yes. This device does not have an electric clutch. It has a mechanical brake, which in all cases is removed, whether setting up or whether tuning, but in all cases it has a high frictional load due to the spinning manual, and due to the string drive pointer, and that restraining point makes it just possible to set up the tuner, one handed setup, but we prefer and we constantly teach, although our commercial people don't always do it, we con-

(Testimony of Bertram A. Schwarz.)

stantly teach that the preferred way of setting up is to push in and to rotate the manual with this type of tuner, and thereby retain the control of the treadle. But if they don't do that they still have the restraint of this spinning manual and the string drive which adds a considerable frictional load to the tuner. [423]

Q. In your direct examination you gave some examples, outside of automatic tuners, in which one member is made coaxial with another member. Can you think of any other cases in which the axis of one member has been made coaxial with another?

A. I was thinking of lining up bearings at the time, or lining up wheels, so they rotate in the same plane, in the same circle.

Q. Any other examples?

A. No. I cannot think of the specific usage, clock gearing, or something of that sort in which the two gears are put concentric. I know we are always troubled with pitch diameter concentricities when two gears are operating co-operatively on a common shaft, when put adjacent to each other, particularly.

Q. In all those cases the coaxial axes stay coaxial throughout the range of operation, isn't that right?

A. You want them to.

Q. What did you say?

A. You want them to. Is that the answer?

Q. Would you make the front wheels of an automobile coaxial? A. Yes.

(Testimony of Bertram A. Schwarz.)

Q. Irrespective of the fact that the king pin—that the wheel has camber and tilt? [424]

A. I did neglect that at the moment. That is right. I didn't think of that. You would have caster and camber to consider in the front wheels of an automobile.

Q. So you wouldn't make them coaxial?

A. No, for another reason.

Q. How about the rear wheels?

A. I couldn't testify to automobile wheels. I would have to study the special problems of turning around corners and the special problems of non-skidding and easy-steering and non-wearing of tires, all of which have a bearing on the way the wheels happen to be tilted, one with respect to the other, and deliberately not made coaxial.

Q. Isn't it true, then, in all those examples that you have been able to find you make things coaxial only when there is some known reason for doing so?

A. Yes.

Q. That is, in a case of the front wheels of an automobile you wouldn't make them coaxial?

A. You have a reason for not doing so. You might start by making them coaxial and find by experience and trial that you would not want them coaxial. Just as in this case you might start the other way and quickly find that you would want them coaxial.

Q. In each of these examples, isn't it true that the coaxial relationship has been used to facilitate

(Testimony of Bertram A. Schwarz.)

rotation, [425] such as these coaxial bearings and shafts?

A. To prevent bind or elliptical movements, yes.

Q. So as to make it easier to move the parts?

A. That is right.

Q. So that rotation would be facilitated?

A. That might be one purpose of it. Again you would have to fit it to the specific problem. You may not want them to move too freely, and yet you may not want them to try to take different circles of movement. You might want to deliberately put friction in them, for example. You may not want to put friction in that form.

Q. Have you seen this exhibit, Defendant's Exhibit M?

A. I don't recollect seeing it before.

Q. This is an exhibit introduced on behalf of the defendant to illustrate the important features of the Leishman patent in suit. You will notice there is a tappet and a rotatable rocker. Isn't it true that when you loosen the tappet in this exhibit and move the lever down that it will not in the least bit disturb the setting of the rocker? I mean when the tappet is loose.

A. The tappet is loose now, as far as I can see, very loose, and it has moved the rocker right there.

Mr. Leishman: Press it by the button. You are pressing it by the lock the other way.

The Witness: Yes, it has conformed to the rocker and [426] the rocker doesn't seem to have moved.

(Testimony of Bertram A. Schwarz.)

Q. (By Mr. Flam): In this case the rocker is quite free to move, isn't that right, that is, on Exhibit M?

A. The rocker is reasonably free to move but has a considerable amount of inertia because of its weight. The tappet is even freer to move, and has less inertia.

Q. Comparing that with the Marschalk device Exhibit E, isn't it obvious that the rocker in that model has a great deal more inertia than the rocker in Exhibit M?

A. It looks like it would have, although judging from here I don't know. This feels like it might be made of aluminum. Is that made of aluminum? This feels like it might be made of steel.

Q. If you want to I can find out.

Mr. Leishman: I don't remember. That was made a long time ago. It might be aluminum.

The Witness: I don't think I can testify that it is as heavy or heavier than this one. Yes, I am quite convinced that is lighter. It is probably aluminum or duralumin, and this one is probably steel.

Mr. Flam: I think when he said "aluminum" or "duralumin" the witness referred to Exhibit E. Is that right?

The Witness: Yes.

Mr. Flam: And when you referred to steel you referred to Exhibit M? [427]

The Witness: Yes, Exhibit M.

(Testimony of Bertram A. Schwarz.)

Q. (By Mr. Flam): Prior to December 15, 1934, do you know of any automatic tuner in which a freely pivoted member pressed upon opposite sides of the axis of another rotatable member at the same time while the rotational axis of these members were in line?

Mr. Lyon: I object to that as not cross-examination.

The Court: What are you reading from, the patent?

Mr. Flam: No, your Honor.

The Court: Objection sustained.

Mr. Flam: That date, your Honor, was the date when the original application finally resulting in the patent in suit was filed, and that is the significance of the December 15, 1934, date.

The Court: I didn't know what that was. Repound the question with that statement.

Q. (By Mr. Flam): Prior to December 15, 1934, do you know of any kind of a device in any automatic tuner in which a freely pivoted member pressed upon opposite sides of the axis of another rotatable member at the same time while the rotational axes of these members were in line?

Mr. Lyon: I object to that on the ground it is not cross-examination. This witness was put on to describe certain structures and certain things. He wasn't put on to describe what was in the prior art in general. [428]

(Testimony of Bertram A. Schwarz.)

The Court: I think so. I think the ruling was correct before. It will be sustained.

We will hear the rest at 2:00 o'clock.

(Whereupon at 12:00 o'clock noon, a recess was taken until 2:00 o'clock p.m. of the same day.) [429]

Wednesday, June 2, 1948, 2:00 P.M.

The Court: Proceed, gentlemen.

BERTRAM A. SCHWARZ

called as a witness by the plaintiff, having been previously sworn, resumed the stand and testified further as follows:

Cross-Examination

(Continued)

By Mr. Flam:

Q. In this Exhibit M you notice there is a rocker and a tappet, and when you bring the rocker and tappet together the axis of the rocker and tappet are coaxial? A. Yes.

Q. When I brought these two parts together, the tappet was freely moved and it engaged opposite sides of the rocker. When did you first learn of an automatic tuning device that employed that combination of tappet and rocker which when freely pivoted—in which the tappet when freely pivoted could be brought into coaxial position with the rocker?

(Testimony of Bertram A. Schwarz.)

A. I don't believe I could mention a specific date. We laid out tuners of that sort, and in the process of laying it out came to that conclusion.

Q. When was that?

A. We worked on tuners of that kind as far back as 1937 or '38, between—somewhere between '37 and '38, laid them out, and we built samples and studied the requirements [430] of those tuners.

Q. Was that the first time you ever heard of any device in which there was a freely pivoted rocker and a freely pivoted tappet that would become coaxial when they were brought into engagement, the tappet pressing on opposite sides of the rocker?

A. I can't testify to ever becoming greatly conscious of coaxiality. I worked on the rack tuner, and we decided where we would put the axis on that relative to the rack steps, and when we tried rockers, we decided after trial where to put the axis relative to the treadle bar. And I can't remember just becoming exactly conscious that it should or shouldn't be coaxial.

Q. That was no earlier than 1937, is that right?

A. In the years 1937 and perhaps early 1938 most of this work was done, including studies of this type of tuner mechanism.

Q. I think you spoke of coaxiality on your direct examination as a principle. Isn't it rather a relationship between parts?

A. I am not clear as to the difference of defi-

(Testimony of Bertram A. Schwarz.)

nition there. It is a relationship between parts, and therefore I would have called it a principle.

Q. That is, in your mind the principle in that case is the same as the relationship between parts, is that right? [431]

A. The principle being the relationship between parts is the way I had intended it. The relationship of the two axes.

Q. That is, when there is more than one axis, and they come into alignment, then the relationship between the two axes is that which might be termed coaxiality, is that right?

A. Yes, I believe that is the definition.

Q. You stated you had known about making things coaxial ever since you studied mechanical design and mechanical engineering at school. Did you ever make the axis of one member coaxial with another separate member to keep them from rotating with respect to each other, or to keep them from rotating at all?

A. I don't think I got all of that question. Will you please repeat it?

Q. Did you ever make any two members coaxial for the purpose of stopping all rotation whatever?

A. Relative movement?

Q. No. I mean all positive movement.

The Court: I don't understand that question, Mr. Flam, myself. Maybe he does. And I am sure you do, because you have asked it. I don't.

Q. (By Mr. Flam): The purpose of the coaxial

(Testimony of Bertram A. Schwarz.)

principle in the Leishman device, as we understand it, is that when the two axes become coaxial there is no rotation whatever of [432] the rocker.

The Court: I see.

The Witness: I think I could testify to that, after hearing what you mean, since there is no movement on them, then the two I would expect would not have any tendency to rotate.

Q. (By Mr. Flam): Will you answer whether you have ever made parts coaxial in order to prevent movement of one of the parts?

A. I cannot think at this moment of an instance.

Q. Can you think of any example of one in which movement of both parts is prevented after they have become coaxial?

Mr. Lyon: It doesn't seem to me, your Honor, that these questions are pertinent, because the witness hasn't subscribed to the theory that that is the purpose of aligning these axes in this device.

Mr. Flam: He did testify about examples of coaxiality and what they were used for.

Mr. Lyon: I think he has testified that the purpose was to avoid moments. I don't think he has subscribed to these questions at all. I think there should be a foundation laid for them. I haven't any objection to your interrogating him, but the questions are going to be very confusing and the answers are going to be very confusing in the record. [433]

(Testimony of Bertram A. Schwarz.)

The Court: Objection overruled.

The Witness: May I hear the question again?

(The question referred to was read by the reporter as follows: "Can you think of any example of one in which movement of both parts is prevented after they have become coaxial?")

The Court: Movement of both parts?

Mr. Flam: Yes.

A. I am sorry, I can't at this moment.

Q. (By Mr. Flam): Then, so far as you know, this arrangement shown in the Leishman patent and as exemplified in these exhibits is unique, you haven't been able to find anything prior to 1937 like it, is that right?

A. I haven't testified to the fact that I have seen this device presented to me as coaxiality. I don't believe that I could say that as of 1937 or 1938 or 1939 was the beginning of seeing this device as a unique one.

Q. Prior to 1937 you saw no device, then, in which the principle or relationship of the parts utilized coaxiality to prevent any movement of one or both of the parts that become coaxial?

A. I cannot think of an instance at this moment.

Q. You have testified about these Schaffer models, such as Exhibit I, haven't you?

A. Yes, I have. [434]

(Testimony of Bertram A. Schwarz.)

Q. And also Exhibit H. Those are lever-operated devices in which a tappet is utilized? Do you see that? A. Yes.

Q. Are you familiar with that?

A. Yes, I think I am.

Q. Applying the lock of Schaffer to that tappet and turning the screw on the lever, would that form an entirely adequate and satisfactory lock for the tappet? I am just talking about the lock, not about the operation.

A. I wanted to see what sort of lock it was, and this is a very brief examination. I can see that it binds across a bigger diameter there and would be considered to be—it would have fair effectiveness because of the increase of diameter there for the increase of moment arm of the locking device relative to the hub as compared with other devices that I have testified to. I would not be able to state the effectiveness of that without tests of this particular model and this particular sample.

Q. Can you do it with this Exhibit H?

The Court: That is the same Schaffer complete.

Q. (By Mr. Flam): Why can't you test the adequacy of the lock in these devices?

A. I think you would have to have equipment to do that for angular rotation, to see whether it would turn a shaft here or move from the shaft.

Q. Does the lock place a torque on the shaft in any way? What has the rotation of the shaft got to do with the lock? That is what I am getting at.

(Testimony of Bertram A. Schwarz.)

A. I mean by that after it is locked up whether it would return to the given point. I would have to have an indicator on here, know the load, and go through the measurements, which I haven't done.

Q. You testified that these Zenith Schaffer models were entirely satisfactory in use and could be used very efficiently for automatic tuning, didn't you? Or did I misunderstand you?

A. My understanding of the testimony was that a Schaffer tuner, I know of no reason why it couldn't be made or isn't as satisfactory for automobile, and so on. I think I testified that we took the tuner and adapted it for automobile use and it was quite satisfactory in that respect. And I don't think we changed the lock-up too seriously on it.

Q. You use the same type of lock on your Exhibit 3, Plaintiff's Exhibit 3, as you do on the Schaffer, is that what you mean?

A. We come across the outside of a tappet that is very similar to this one, and it has about the same rotational point, and it is a very effective lock. And from looking and examining this model it looks as though it has the same kind of lock, and therefore I think this lock would be [436] comparable to that lock in efficacy.

Q. Since the lock on your Exhibit 3 is entirely satisfactory, then you mean to say that the lock on the Schaffer device would be?

(Testimony of Bertram A. Schwarz.)

A. That is the conclusion I would arrive at. That was the reason for the conclusion.

Q. Would there be any difficulty in using the same kind of lock for the tappet as is used in Schaffer upon the Leishman device, such as shown in Exhibit M, if you wanted to?

A. That would be another step removed and it would call for still more conjecture.

Q. Couldn't you immediately substitute the type of lock illustrated by Schaffer in Exhibit M?

A. No, for several reasons that I believe I testified to. One is that angle of this tuner is so small that the loads due to the inefficiency of this tuner as compared to a 180-degree tuner requires a much better lock here than here (indicating).

Mr. Lyon: You had better identify which is "here" and which is "here."

The Witness: I beg your pardon. The lock on Exhibit M would be required to be better than the lock on Exhibit I or the lock on Plaintiff's Exhibit 3, or the lock on Exhibit H, because tuner M has a short angle of rotation, and therefore [437] has an unfavorable pressure, an increase in the load and the work it must do, and therefore I would expect the lock has to be more effective and efficient than the lock on these other tuners, that is, tuners similar to I. Furthermore, the diameter of the hub held by the lock, as I believe I have testified to, is limited, otherwise the rocker would have to increase in size, and if it increases in size

(Testimony of Bertram A. Schwarz.)

that further restricts the movement unless the lever becomes large, so we get into a lot of conjecture as to the size, and as to the angle of movement, and as to the pressures required; but in general I would expect that a better lock is needed on this type of tuner, that is, tuner M, than on tuner I. [438]

Q. Well, I don't think I quite understand the reason why a better lock would be needed. Would more force have to be exerted upon the Leishman type of device than the Schaefer devices or in plaintiff's Exhibit 3?

A. Either more force or more push button stroke the more work occurs at the tappet.

Q. And why is more work needed at the tappet?

A. Because more multiplication is needed to drive the 180-degree condenser with a 25 to 38-degree tuner, and we have found that was true even with a 60 to 80-degree tuner, where between 60 and 80 is a more optimum load than this type of tuner even that requires special care in the design of a lock-up—greater care than in the rack type of tuner.

Q. And to whom is entrusted the design of the lock-up?

A. Mechanical engineers.

Q. They are skilled workers in the art?

A. Skilled workers in the art, yes.

Q. And you had no difficulty in designing these extra special locks that were needed to prevent movement of the tappet, is that right?

A. It depends upon the degree of the problem.

(Testimony of Bertram A. Schwarz.)

The end result would be difficult to forecast or how satisfactory the end result would be would be hard to say until all of those—until we had gone through all the steps and they had [439] gone through all the steps to actually do it.

Q. Now, if the rocker in the Leishman device would permit a movement of 60 degrees between extreme positions would the same problems arise?

A. It would help it considerably, but as I think I testified, even an optimum of these which I think in our experience shows falls somewhere between 60 and 80, the problem is still more intensive but can be solved as has been demonstrated.

Q. Don't you know that as a matter of fact condensers were available ten years ago with less than one inch ounce of torque and this was referred to and marked as zero torque condensers?

A. Yes, but they weren't practical of application. I can testify to the fact that we had to increase the torque for the reasons I gave in my testimony this morning. We had to increase the minimum torque beyond one inch ounce. Otherwise microphonism was a serious problem in selective radio sets or miss-tracking with the vibration and particularly in auto radio.

Q. Well, your answer is that there were low torque condensers available ten years ago, is that right?

Mr. Lyon: I object to that. What does he mean by "available"? The witness testified that they couldn't be used with those torques and I don't

(Testimony of Bertram A. Schwarz.)

think the record should [440] contain an indefinite question so as to confuse the witness' testimony.

Q. (By Mr. Flam): Do you know what I mean when I say "available"? That they could be bought on the market ten years ago with less than one inch ounce of resistance torque?

A. I see what you mean and I couldn't testify yes or no, because I know they weren't usable by us. We never considered them.

Q. Didn't you say sometime in the course of your testimony that the minimum torque available on condensers about ten years ago was about three or three and a half inch ounces?

A. If I did I didn't intend to say that the torque limit—that is the maximum limit of condensers today is about three-inch ounces. Sometimes we have to pick condensers higher than that. And ten years ago it was about four and a half inch ounces maximum and that is to allow for a production tolerance in it by the manufacturer of condensers so that their low limit wouldn't run too low. They have to have a maximum and a minimum.

Q. Don't you know that these relatively low torque condensers were of the type that were always used with coaxial rocker and tappet tuners?

A. No, I couldn't say that. [441]

Q. I show you Defendant's Exhibit HH and ask you whether that condenser has a low or high torque?

(Testimony of Bertram A. Schwarz.)

A. I couldn't tell you without accurate measuring instruments how low or how high it is. It doesn't seem very near the maximum limits that I testified to, but I wouldn't be sure.

Q. And those maximum limits were three and a half inch ounces, is that right?

A. About three-inch ounces now and about four and a half inch ounces ten years ago.

Mr. Flam: I am through with my cross-examination, your Honor.

Redirect Examination

By Mr. Lyon:

Q. Do you have Exhibit M before you?

A. Yes.

Q. I wish you would compare on that exhibit the shape at the bottom of the locking member with the drawing of the reissue patent in suit, Figure 2, the extension of the lever which comes in contact with the hub locking the hub attached to the patent is V-shaped?

A. In Exhibit M, whereas in Figure 2 of the reissue patent, 20827, it is not shown V-shaped and it is shown to be on the hub as a circle.

Q. Now, can you state what [442] effect if any, that difference would have on the effectiveness of the lock in this Exhibit M?

A. Two concentric circles as this is shown, if produced, will have one point of contact whereas a V will have two points of contact and will uti-

(Testimony of Bertram A. Schwarz.)

lize the principle of a tool-maker when he wants to keep a piece from turning he puts it in a V block because the V-block then gives him two points of support and he hits it with the tappet at the third point—in this case the third point being the center and that would minimize rotation of the tappet when it came in contact with a treadle.

Q. In other words, which would be the most effective in locking the structure as shown in this model, Defendant's Exhibit M, or the structure as shown in Figure 2 of the patent—reissue patent drawing?

A. I think that the V-shape as shown on Defendant's Exhibit M would be the more effective.

Q. You have been asked about the operation or effectiveness of this feature of coaxiality in preventing two parts moving in connection with the device of the patent in suit and you have referred to the principle of moments or the elimination of moments. Will you explain just what you mean by that and what a moment is and how the elimination of moments avoids this walking that has been demonstrated here as being avoided by coaxiality?

A. I will endeavor to do so. If the two centers are at a distance from each other the separating distance is considered the lever arm or a moment arm.

When one point of one circle hits the point of its mating circle and the centers are not together—in other words, there is a moment arm difference

(Testimony of Bertram A. Schwarz.)

between centers, then there will be a fight between the two circles as to each one wanting to follow its own path because of the leverage which exists between those two points.

I don't know whether that makes it entirely clear. Let me see if I can elucidate. For example, if we were striking right through the center of a circle with an arm and hitting the exact center of that circle the circle would not be expected to turn because there would be no moment arm, but if we were striking with an arm any point out from that center we have have a moment arm by the distance out from that center and the circle would then move such as a crank and the crank would be the moment arm.

Q. Now, what is the relation between this matter of moments which you have just described and the principle of concentricity or symmetry which you referred to on your direct examination.

The Court: We will take a recess for a few moments.

(Short recess.) [444]

The Court: Proceed, gentlemen.

Mr. Lyon: I believe there was an unanswered question, but the reporter has changed, so I will restate the question.

Q. (By Mr. Lyon): Mr. Schwarz, what does this engineering practice of eliminating moments, that technique, have to do with the fact that in this tuner having an adjustable tappet and rocker

(Testimony of Bertram A. Schwarz.)

with coaxiality there is no walking movement of the operating member as demonstrated to the court here?

A. This application of the old principle of moment arms and how they work and how they function would be in this case to prevent the tappet from jumping around, or, in other words, from moving when it came into relation with the rocker. And that, as I have tried to point out, is application of an old principle to produce a desired result, because without a moment arm the two pieces would either not move, or if actuated would move together.

Q. If the moments were eliminated would their effect be as you have stated, if two members move that they move together, or if one moves the other will move with it?

A. I think one is the converse of the other. In other words, if we consider one a transmitting means, and the other a receiving means, if the one was actually in dynamic movement the other would be expected to move with it if they were concentric. But if the one was not in movement and [445] the other came up against it, it would not be considered to move in any other plane or in any other circle, because of the elimination of moment arms. I think I can explain by a simple example, if I may be permitted to do so, to try to make my explanation a little clearer: If a tool-maker, as I said before, had to drill a hole or prick-

(Testimony of Bertram A. Schwarz.)

punch a bar, he would put it in a "V" block and would be sure to punch it in the dead center of that bar, otherwise the bar would move relative to the V block, and that would be the application of moment arms to movement, if he punched or drilled it in the dead center it would not be expected to move.

Q. Does a toolmaker practice that technique of eliminating moments in the ordinary course of practicing his profession?

A. Yes, he does, when he takes a bar and puts it in a drill press, or if he wants to prick-punch it to drill it he puts it in the V block and then hits or drills it in the dead center right through the center of the bar, and thereby introduces no upsetting moment arms causing no movement of the one relative to the other.

Q. To make the record clear, is it your testimony that this technique of eliminating moments in designing machines or pieces of apparatus is what you referred to as principles of symmetry or concentricity, which you stated were known and expected of machine designers, to your knowledge, ever [446] since you have been in school?

A. That is what I meant when I testified to the symmetry, concentricity and coaxiality, and the laws of it for relative movement or non-movement.

Mr. Lyon: I have no further questions, your Honor.

(Testimony of Bertram A. Schwarz.)

Recross-Examination

By Mr. Flam:

Q. Do you have the patent Exhibit A before you, Mr. Schwarz?

The Court: Do you mean the patent in suit?

Mr. Flam: Yes, your Honor.

The Court: Here is my copy.

Q. (By Mr. Flam): In Figure 2 where there is a dotted line just around the hexagon, do you see that? A. Yes.

Q. Do you notice the point on that dotted line right immediately above——

A. I could not say that is a point, and I would not have interpreted that to be the apex of an angle, because in reading the specifications and in looking at this that might be a circle around the center hub.

Q. Don't you see any difference in the line from this point where the part 68 contacts the circle down around and over to where the circle comes around and contacts a line prolonged from the right-hand side of that projection 68? [447]

A. It is very imperfect dotting, but why wouldn't the dots go around to hit the tappet on here and show where it would leave the circle, and that doesn't show; so that tappet 62, there is no evidence of anything but a circle on it, and therefore this would look like a very poorly drawn, perhaps, circle in three or four of the dots here at the top.

(Testimony of Bertram A. Schwarz.)

Q. Isn't it true that there are several dots there near the center above the hexagon that seem to diverge and come to a point?

A. They are irregular, they are not a very good straight line, nor are they a very good circle. They look more like a circle than anything else, as far as I can see. I couldn't interpret that to be a V.

Q. That part of the circle that you call a circle between the two vertical lines defining part 68 is not a good circle according to your testimony, is that right?

A. It is irregularities in the dash lines.

Q. And those irregularities don't exist in other parts of the circle, do they?

A. Well, here is one here that is a little blurred, for that matter, and here is one out here that is a little blurred, and one up there that is a little blurred. I am not sure how skilled the draftsman was, whether his ink ran, or what it was. It is hard to testify whether it is a good circle or bad circle. I would never have taken [448] it to be anything but a circle.

Mr. Lyon: Mr. Flam, I think you have stipulated that there is nothing in the written specifications here to indicate that the bottom of that leg 68 is formed with a V notch.

Mr. Flam: I don't remember seeing it in the patent, but of course the patent will speak for itself.

Q. (By Mr. Flam): Then in your opinion if it

(Testimony of Bertram A. Schwarz.)

should be in the form of a circle, that is, this lower surface of the clamp, by making it a "V" shape it would improve the clamp considerably?

A. It would be an improvement.

Q. Would it be sufficient to overcome the difficulties we are talking about?

A. I wouldn't be prepared to say that. I would be prepared to say that it was a step in the right direction.

Mr. Flam: That is all.

Mr. Lyon: That is all, Mr. Schwarz.

Mr. Lyon, Jr.: Your Honor, we have one more witness who will not dwell on any of the subject-matter testified to by Mr. Schwarz, but we have prior art to put in.

Dr. Mackeown. [449]

SAMUEL S. MACKEOWN

called as a witness by and on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

The Clerk: Your full name, please?

The Witness: Samuel S. Mackeown.

Direct Examination

By Mr. Lyon, Jr.:

Q. Where do you reside, Dr. Mackeown?

A. Pasadena.

Q. What is your age? A. Fifty-two.

Q. What is your occupation?

(Testimony of Samuel S. Mackeown.)

A. I am Professor of Electrical Engineering at the California Institute of Technology.

Q. How long have you been a professor at the California Institute of Technology?

The Court: Just a moment. Mr. Lyon, I can save you a great deal of trouble. I have had Dr. Mackeown testify before me several times.

Mr. Flam: We will stipulate that Dr. Mackeown is qualified in his field.

Q. (By Mr. Lyon, Jr.): I show you patent No. 585,996 to Woodbridge.

Mr. Flam: No. 36 in the book, I believe, your Honor.

The Court: Do you have that, Doctor? [450]

The Witness: Yes, I have that.

Q. (By Mr. Lyon, Jr.): That patent is dated July 6, 1897, is it not? A. It is.

Q. Will you explain to the court by reference to the drawings any shaft positioning mechanism shown in that patent?

A. Yes. This patent is for a cash register in which a shaft is rotated a pre-determined amount by pressing on a key representing a number. That is shown in Fig. 2. The keys show the different numerical values on the finger pieces of the key, and at the other end of those levers are fixed tappets, they can be seen, probably, best in Fig. 1, so that when any particular key, c2 is depressed, a tappet will be forced up into contact with a rocker and position

(Testimony of Samuel S. Mackeown.)

the rocker. The way the rocker is positioned and the way the tappet works probably can be seen best in Fig. 10, and also Fig. 8.

In Fig. 10, the tappet, which is non-adjustable, is indicated as c3, and as it is raised it makes contact with one of the arms marked d2 of the rocker, and rotates the rocker until the other arm marked d2 contacts the tappet, and the rocker is thus rotated through a pre-determined fixed angle. The rocker itself can be seen in Fig. 8. It consists of two bars with an axis running, or shaft running through the center of the rocker. The description of the shaft positioning part of this patent is given in the paragraph on page 1, starting at line 33 and running through to line 64, and also on page 2 between lines 16 and 43; and the device shown in Fig. 10 is described on page 4 at line 126 and running through to line 3 on page 5.

The other parts of this patent have to do with other mechanisms in the cash register, and I don't think are of importance.

Q. Referring to Figs. 8 or 10, which is the shaft which is to be positioned by the rocker?

A. The shaft is the part shown in Fig. 10 as d3, and on the end of it is a sector d4 which contains numbers that are printed on a ticket, so that as the shaft is rotated different numbers are positioned so that they can be printed on the ticket by the cash register.

Q. You stated Fig. 10; I believe you were referring to Fig. 8, were you not?

(Testimony of Samuel S. Mackeown.)

A. It is shown on both Fig. 8 and Fig. 10, shaft d3 is shown on both of them.

Mr. Lyon, Jr.: I should like to offer the Woodbridge patent No. 585,996 in evidence.

The Court: So ordered.

The Clerk: Plaintiff's Exhibit 8 in evidence.

(The document referred to was marked Plaintiff's Exhibit 8, and was received in evidence.)

The Court: It might be better to use the one that is in this volume, if you have no objection.

Mr. Flam: I believe, your Honor, it has already been offered in evidence by the defendant.

The Court: I don't think so.

Mr. Lyon, Jr.: I checked it rather carefully, your Honor. It was referred to by Mr. Leishman, but it was not offered in evidence.

The Court: I think it was discussed by one of the witnesses.

Q. (By Mr. Lyon, Jr.): Dr. Mackeown, I show you patent No. 2,014,358 to Miller, dated September 10, 1935.

The Court: It doesn't seem to be indexed here in this book.

Mr. Lyon, Jr.: I have one here, your Honor.

Q. (By Mr. Lyon, Jr.): Will you please explain, Dr. Mackeown, the shaft positioning mechanism, if any, shown in the Miller patent?

A. Yes. This Miller patent is another cash register mechanism which operates by positioning a

(Testimony of Samuel S. Mackeown.)

shaft through an angle determined by the specific key that is depressed. In Fig. 3, for instance, the cash register levers with the keys on their forward end are shown in Fig. 3; they are pivoted about the shaft 3 and the rocker that is rotated is rotated about the shaft 5 and consists of the shaft 5 with the two legs 7 and 8. Referring to the last page of the drawings, Figures 9, 10, 11 and 12 show the form of the tappets mounted on these different key levers, and how they operate to position the rocker and rotate the shaft 5. Figures 9 and 10 represent the tappet for the key lever used to register the figure 1. In Fig. 9 the key lever is not depressed, and in Fig. 10 it is depressed. What happens in this case is that the surface 12 on the tappet, which Miller calls a cam surface, engages the rod 7 of the rocker, and rotates that rocker and actually the bar 7 rides over the top of the cam surface and down the other side until the bar 8 engages the surface 13 of the tappet, which is called the stop surface of the tappet. [454]

When the rocker engages both the surface 12, and the surface 13, the tappet is positioned. Figures 11 and 12 show the same positioning for a different key and in this case the key is actually the key used to register the figure 9. And Figure 11 shows the tappet and rocker when the key is not depressed and Figure 12 shows the tappet and rocker when the key is depressed.

Of course the key for Figure 9 rotates the shaft

(Testimony of Samuel S. Mackeown.)

through a different angle than the key for Figure 1.

In this device there are two apertures in the rocker between the leg 7 and the shaft 5, and between the leg 8 and the shaft 5. And portions of the tappet project into this aperture when the key is depressed and both legs of the tappet make contact with the rocker.

The operation of the shaft-positioning part of this patent is described on page 2, column 1, line 14, under the title "Actuating Means" to page 3, column 1, line 13. The rest of the patent is concerned with other mechanisms in the cash register with which I think we are not concerned.

Mr. Lyon: I offer the Miller patent No. 2,014,358 in evidence.

The Court: It will be received and marked.

The Clerk: Plaintiff's Exhibit 9 in evidence.

(The document referred to was marked as Plaintiff's Exhibit 9, and was received in evidence.)

Q. (By Mr. Lyon, Jr.): I will show you patent No. 1930192 issued to Cunningham, dated October 10, 1933, and ask you if you are familiar with that patent?

A. Yes, I am familiar with the Cunningham patent.

Q. Will you please explain the shaft positioning mechanism, if any, in the Cunningham patent?

A. Yes. This Cunningham patent is a device for determining the amount of carbon dioxide in

(Testimony of Samuel S. Mackeown.)

flue gas so that automatic determination of the carbon dioxide can be used to record or control the combustion, say in a furnace.

The gases, if we look at Figure 1, the gas enters the device in a measured quantity through the chamber marked 30, flows through the tank marked 10 at the bottom where the carbon dioxide is absorbed by potassium hydroxide or potash solution, and then enters the chamber marked 15.

The height of the float in chamber 15, which is marked 38, is, of course, then determined by the amount of carbon dioxide which was absorbed and this positions the rod, 40. The position of this rod, 40, must be transmitted then to devices for recording the amount of carbon dioxide absorbed and that is done by a shaft positioning element that can be seen on the last sheet in Figures 5, 6, 7, 8 and 9.

If we look at Figure 8 we can see the rod, 40, which is the same rod marked 40 in Figure 1, and the way the shaft positioning element operates can be seen from [456] Figures 5, 6 and 7.

What actually happens is that the push rod 45, is moved upwardly which releases the hammer, 43, to make contact with the disc, 41, on top of the rod 40, so that the position of this hammer, 43, is determined by the height of this rod, 40, which is to be registered.

The hammer, 43, is rigidly connected.

The hammer, 43, is rigidly connected to the wheel 55, and which has the two pins, marked in

(Testimony of Samuel S. Mackeown.)

Figure 5, so that the position of this wheel or tappet is positioned by the position of the hammer 43.

As the rod, 45, moves further upwardly it causes the lever, 51, to move counter-clockwise and that locks the tappet into position determined by the height of the rod 40.

Further movement upwardly of the rod 45, moves the lever 51 further downwardly, bringing the tappet marked 56 into contact with the rocker which is marked 57. This can be seen possibly best in Figure 9. So, the tappet 56 positions the rocker 57 and thus positions the shaft 58 on which the rocker is attached.

When the tappet is in engagement with the rocker the apparatus is so designed that the axis of the tappet and the axis of the rocker lie in the same line. This is shown in Figure 7 which is a drawing of the apparatus. [457]

When the tappet has engaged the rocker and moved it into its final position in Figure 7, it can be seen that both legs of the tappet are in engagement with both arms of the rocker and also that the center of the shaft, 58, on which the rocker is mounted and the shaft on which the tappet is mounted, coincide and do have a coaxiality.

Mr. Lyon: I offer the Cunningham patent, 19330192 in evidence. .

The Court: So received and marked.

The Clerk: Plaintiff's Exhibit 10 in evidence.

(Testimony of Samuel S. Mackeown.)

(The document referred to was marked as Plaintiff's Exhibit 10, and was received in evidence.)

The Witness: I might add for the convenience of the court, that the shaft positioning mechanism in this Cunningham patent 1930192 is described on page 2 from lines 54 to lines 112.

The rest of the patent—most of the rest of the patent is concerned with the gas measuring equipment that I don't think is important in this case.

Mr. Flam: I would like to see that model if you are going to exhibit it to the witness.

(Device handed to Mr. Flam.)

Q. (By Mr. Lyon, Jr.): I show you a device which I ask that you compare with the Cunningham disclosure.

A. This device is very similar to the [458] shaft-positioning device shown in the Cunningham patent and particularly as shown in Figure 9 of the patent.

The device has the lever which is marked 50, and also another lever which is marked 51. It has the tappet which is the wheel, 55, with the two pins marked 56, which form the arms of the tappet and it has the shaft 56, on which is mounted a triangularly shaped rocker shown as 57.

Comparing this figure 9—comparing it with Figure 9, the hammer consisting of the shaft 44, and the bolt 43, are not present and have been removed and connected to the shaft 58 is a section of a

(Testimony of Samuel S. Mackeown.)

gear which is in mesh with the ordinary tuning condenser of a radio.

In the patent shaft 58 is shown as connected in Figure 2, to a pen for making an ink record of the amount of gas present—amount of carbon dioxide gas present in the flue gas in Figure 3, as connected to an electrical device and circuit, in this case it is a resistance, so that the amount of carbon dioxide gas can be recorded at a distance from the instrument. And in Figure 4 as making electrical contact for controlling automatically the amount of air fed to the furnace to give correct combustion.

Q. (By Mr. Lyon): Taking the device which I have shown you, is that device capable of positioning the shaft which you have pointed out as 58 in the patent and consequently [459] the condensers? A. Yes.

Q. Will you show the court how that is done?

A. This device can be used for turning the condenser to any desired angle to bring in any radio station.

To set this device in the beginning the lever containing the tappet can be moved down to bring the tappet into engagement with the rocker. The condenser then can be positioned manually to any desired position. The brake then can be applied and then if that condenser is turned to any other position and the tappet is moved downwardly with the brake applied, the condenser will be brought back to that pre-determined position.

(Testimony of Samuel S. Mackeown.)

Q. Is that operation the operation which has been discussed here in connection with these various rocker and tappet tuners?

A. Yes, this is a tappet which is brought down to engage a rocker and thus positions the shaft on which the rocker is mounted.

Q. Now, in the devices you show it when the tappet is brought into engagement with the rocker and the rocker then tuned to a particular station, is there present any movement of the lever which carries the tappet?

A. No. The lever is held down into position—it is held in the position shown in Figure 7 of the Cunningham [460] patent and the tappet is in engagement with both arms of the rocker. The axis of the rocker is coaxial with the axis of the tappet and there is a balance of all movements and there is no tendency at all for the lever to move as the rocker is rotated.

Q. When you say there is no tendency for the lever to move do you mean there is no walking in the sense that we have used the term in this trial?

A. Yes. There would be no walking as it has been used in this trial.

Q. Are you familiar with Plaintiff's Exhibit 2 in this case, the letter to the trade describing the test for coaxiality?

A. I have read that letter some time ago. I haven't read it very recently.

Q. Will you read it over, particularly the second page?

(Testimony of Samuel S. Mackeown.)

A. I have just read the first two paragraphs on page 2 of this letter, Exhibit 2, and I am familiar with what that test is.

Q. Now, does this, referring to the contents of that letter, does this tuner perform in such a way as to indicate as to pass the test as it were?

A. You are referring to this model in front of me, Mr. Lyon? [461]

Q. The model which we are discussing.

A. Yes. If the tappet is brought into contact with the rocker and the brake or lock is free so that the rocker can move, if the rocker moves or is moved by hand, there is no tendency for the lever supporting the tappet to move or walk.

Q. Dr. Mackeown, are you familiar with Defendant's Exhibit E, the so-called Marschalk model?

A. Yes, I am, Mr. Lyon.

Q. Did you see the demonstration which Mr. Leishman made in his direct testimony as to the adjustment of that model, Exhibit E?

A. Yes.

Q. Can you perform that operation on the device which we have just been discussing? A. Yes.

The Court: You had better refer to it, Mr. Lyon, by exhibit number.

Mr. Lyon: I think we should have it marked for identification, your Honor. I offer this for identification.

The Court: It may be marked.

(Testimony of Samuel S. Mackeown.)

The Clerk: Plaintiff's Exhibit 11 for identification.

(The document referred to was marked Plaintiff's Exhibit 11 for identification.) [462]

The Witness: As I recall, the test you are referring to, Mr. Lyon, is the test made on Exhibit C in which if the tappet is loosened so that it may rotate on the lever which carries it, and that is brought down into contact with the rocker, there is a tendency of the rocker to rotate.

Q. (By Mr. Lyon, Jr.): That's correct. I should like for you to perform for the court the same operation, but using Exhibit 11, for identification.

A. In Exhibit 11 the same demonstration can be made, the position of the rocker can be seen by looking at the leaves of the condenser, because the rocker is attached to that shaft, and if the lever carrying the tappet is moved downwardly, while the tappet is free to rotate, there is no tendency of the rocker, or the condenser, to move.

Q. When you say "no tendency to move," do you mean no tendency to de-tune the condenser?

A. No tendency to de-tune the condenser. I have just demonstrated that on Exhibit 11.

Q. Will you explain now what there is in Exhibit 11 that causes that lack of de-tuning or avoids it?

A. Yes, that is because there is no unbalance of moments about the shaft bearing the rocker, and

(Testimony of Samuel S. Mackeown.)

that is because the shaft bearing the rocker and the shaft bearing the tappet are coaxial.

Q. Dr. Mackeown, in that Exhibit 11, for identification, [463] is that device as you have demonstrated it a device in which when the tappet and rocker—the tappets and rockers are engaged, the tappet may be freely pivoted?

A. The tappet may be freely pivoted provided the lock is not applied.

Q. I understand that. When the tappet in Exhibit 11, as you have demonstrated it, is brought into engagement with the rocker, is there any tendency for the portions of the tappet which meet portions of the rocker to de-tune the rocker by virtue of a lever arm or a moment arm?

A. No, there is no unbalance of moments, so there is no tendency to de-tune. I demonstrated that just a few minutes ago.

Q. Deducing from your testimony, the coaxiality balances up the moments, am I correct?

A. Yes, it is because of coaxiality that the moments are balanced.

Q. Still referring to the Exhibit 11, for identification, device, does that device include a rotatable rocker having two arms which are lying on either side of the axis of the rocker?

A. Yes, those two arms can be seen in either Fig. 5, 6, 7, or 9, and the rocker with the two arms is marked 57.

Q. Does the device have a manually movable operating member? [464]

(Testimony of Samuel S. Mackeown.)

Mr. Flam: If your Honor please, this line of questioning apparently is for the purpose of leading the witness so that he may identify parts of the apparatus corresponding to parts in the claim. I think they are a little too leading for that purpose.

Mr. Lyon, Jr.: Your Honor, the purpose of the questions is only for the witness to aid the court in identifying certain devices which may or may not be in the device. It seems to me that the questions are purely factual and the answers yes or no, depending upon whether those mechanical parts are or are not present in the device.

The Court: The objection is made to the form of the question, Mr. Lyon: Anything that brings out the features that it is asserted or contended illustrate the prior art is proper. But it isn't proper even on the narration of what is claimed to be prior art to put the words in the witness' mouth. I don't think it would take any effect on this witness, but I think we ought to avoid leading questions as much as possible. Otherwise the advocate would be doing the testifying, and I think it is a little better to have the witnesses do that, although that is a rather difficult matter in patent cases, I apprehend.

Mr. Lyon, Jr.: What I am endeavoring to do, your Honor, is to have him tell us whether or not there are certain mechanical parts in that device. That is the only purpose [465] of it.

The Court: I think I understand what you are

(Testimony of Samuel S. Mackeown.)

trying to do, and I understand what the witness is doing. This coaxiality feature is an important feature in the case. I think if you direct your questions to him directly, instead of in the manner in which you have, I think you will avoid the force of the objection, and probably save time, too. We want to save as much time as we can in justice to the importance of the problem.

Q. (By Mr. Lyon, Jr.): Dr. Mackeown, will you point out a rocker, if any, on the device?

Mr. Flam: Same objection as before. I don't think it is proper to lead him to point out these various elements by asking him in that manner.

The Court: I don't see how else he could be asked, except to take up the patent as he has already and discuss it. If there be any verbiage in the specifications, he can pursue the same method he did on two other patents here and point it out.

Mr. Lyon, Jr.: I think Dr. Mackeown has quite adequately described the device which he has compared to the Cunningham patent, and the operation of which it is capable. I don't think it is necessary to pursue that line of identifying parts any longer, so I offer Exhibit 11, for identification, in evidence.

Mr. Flam: If your Honor please, I would like to register an objection and point out that this Cunningham device does not show—the Cunningham patent does not show any tuning device. And, furthermore, as has been often demonstrated to your Honor, the tuners, all of these tuners—and I

(Testimony of Samuel S. Mackeown.)

don't have to pick up any one of them—used the position of the rocker to determine the position of the tappet, so that when you adjust the set in tune with a certain station the rocker assumes a definite position. Then you use that position, or try to, to position the tappet, and then you tighten the tappet in that position. In the Cunningham patent I think Dr. Mackeown has quite correctly described its operation. The position of the rocker doesn't have a thing to do with the positioning of the tappet.

The position of the rocker—rather, the position of the tappet is effected by the position of a float. And after it is positioned, then a pin or some other thing is moved by the engagement of the tappet with the rocker.

In view of that, this is entirely non-analogous to the field that we are working in, and it is entirely improper to urge this combination of Cunningham with a condenser to be properly in the prior art.

The Court: Let me ask Dr. Mackeown a question.

Dr. Mackeown, is there anything in this Cunningham patent 1,930,192 that teaches the use of electricity in [467] connection with it?

The Witness: Yes, your Honor. The shaft 58 which is positioned by the rocker is shown in the Cunningham patent to actuate either an electrical contact, that is shown in Fig. 4, which is on the second sheet, shaft 58 is in effect a switch which can make contact with either of the two elements 69, and give by electrical means automatic control

(Testimony of Samuel S. Mackeown.)

of the combustion. And in Fig. 3 on the shaft 58 is shown a device for changing the electrical constants of a circuit, in this case it is the electrical resistance of a circuit. And the specification describes how, by changing the electrical resistance in this circuit the reading of this device can be transmitted to a distant station and registered there.

The Court: I think I will overrule the objection now. The model is received in evidence.

The Clerk: Plaintiff's Exhibit 11 in evidence.

(The device referred to was marked Plaintiff's Exhibit 11, and was received in evidence.)

Mr. Lyon, Jr.: Your Honor, that concludes my examination of Dr. Mackeown, but we have several exhibits which were attached to the complaint, several documents which were attached to the complaint, and a few other things which I should like to offer in evidence right now, and I think Dr. Mackeown can be of some aid. [468]

Q. (By Mr. Lyon, Jr.): First, Dr. Mackeown, I would direct your attention to Exhibit 3 attached to the complaint, which is identified in the complaint as a copy of the Crosley tuner. Are you familiar, Dr. Mackeown, with that Crosley tuner?

A. Yes, I am.

Q. Was that the tuner which was litigated in the Associated Wholesale Electric case? A. Yes.

Q. Is that drawing a fair representation of that Crosley tuner? A. It is.

(Testimony of Samuel S. Mackeown.)

Mr. Lyon, Jr.: I offer in evidence the drawing of the Crosley tuner attached to the complaint in this action.

The Clerk: The drawing is on one sheet and the description is on the other.

Mr. Lyon, Jr.: That description was meant to be illustrative. If there is no objection by Mr. Flam, why we can offer the whole page.

Mr. Flam: I suppose the purpose of this is to try to show that the device in the Associated Wholesale Electric case is patentwise similar to the devices in this case. If that is the purpose of it, I offer no objection.

Mr. Lyon, Jr.: That is the purpose of it.

The Court: It will be received. [469]

The Clerk: Plaintiff's Exhibit 12 in evidence.

(The document referred to was marked Plaintiff's Exhibit 12, and was received in evidence.)

Q. (By Mr. Lyon, Jr.): The second drawing, I believe, is Exhibit 4 to the complaint, a drawing and some illustrative material on the tuner of the Radio Condenser Company. Are you familiar with the Radio Condenser Company tuner which was the subject of litigation in the case of Radio Condenser Company and General Instrument Corporation v. Leishman? A. Yes.

Q. Is that drawing a fair representation of such tuner? A. Yes, it is.

Mr. Lyon, Jr.: I offer the drawing and the illustrative material in evidence.

(Testimony of Samuel S. Mackeown.)

The Court: It will be so received and marked.

The Clerk: Plaintiff's Exhibit 13 in evidence.

(The document referred to was marked Plaintiff's Exhibit 13, and was received in evidence.)

Q. (By Mr. Lyon, Jr.): The next drawing and descriptive matter is Exhibit 5 attached to the complaint, a similar drawing and illustration of the General Instrument tuner in the same case. Are you familiar with that tuner? A. Yes, I am.

Q. Is that drawing a fair representation thereof? [470] A. Yes, it is.

Mr. Lyon, Jr.: I offer such drawing in evidence.

The Court: So received and marked.

The Clerk: Plaintiff's Exhibit 14 in evidence.

(The document referred to was marked Plaintiff's Exhibit 14, and was received in evidence.)

Mr. Lyon, Jr.: For your Honor's convenience we have here similar drawings and illustrative material which have not been used in this case before, showing exactly the two tuners, I believe Exhibits 7 and 8, that are alleged to be infringements of the Leishman reissue patent. If there is no objection from Mr. Flam I shall offer these in evidence.

Mr. Flam: I don't have an opportunity of carefully going over these drawings, and I assume they are right. If I have copies of these I will offer no objection, but with the privilege of pointing out any error that I may discover.

(Testimony of Samuel S. Mackeown.)

The Court: Of course they will be always received subject to any corrections that are manifestly necessary.

Mr. Flam: I would like to have copies.

Mr. Lyon, Jr.: I offer the drawing of Exhibit 1 to the complaint, which I believe is now Exhibit 6, in evidence.

The Court: Let me understand, Mr. Lyon: That exhibit which you are now characterizing as Exhibit 6, did you say? [471]

Mr. Lyon, Jr.: That, I believe, was filed originally as Exhibit 1 to the complaint, and offered in evidence and received as Exhibit 6. Is that correct, Mr. Clerk?

The Clerk: Exhibit 6 is a tuner with the name Chevrolet on the dial.

Mr. Lyon: That is the one.

The Court: Then what I want to know is is this a new drawing that isn't already in the record?

Mr. Lyon, Jr.: That is an exact drawing of a device already in evidence. It is merely introduced for your Honor's convenience. There are so many models here.

The Court: I understand it now. No objection, Mr. Flam?

Mr. Flam: No.

The Court: So received and marked.

The Clerk: Plaintiff's Exhibit 15 in evidence.

(The document referred to was marked Plaintiff's Exhibit 15, and was received in evidence.)

(Testimony of Samuel S. Mackeown.)

Mr. Lyon, Jr.: For the same purpose I offer a drawing of Plaintiff's Exhibit 2 to the complaint, now Plaintiff's Exhibit 7 in evidence.

The Court: So ordered.

The Clerk: Plaintiff's Exhibit 16 in evidence.

(The document referred to was marked Plaintiff's Exhibit 16, and was received in evidence.)

Mr. Lyon, Jr.: In checking through the evidence I find [472] that no copy of the file wrapper to the patent in suit has been offered or received in evidence, no certified copy of that file wrapper appears to be available, and perhaps Mr. Flam would stipulate to the offering of a photostatic copy of such a file wrapper.

Mr. Flam: That is, without being certified?

Mr. Lyon, Jr.: Yes.

Mr. Flam: I have no objection whatever, except as in connection with all of these things, if there should be any error I should like to point it out.

The Court: That is represented to be a file wrapper of the patent in suit?

Mr. Flam: A photostatic copy of a certified copy. And I don't see any objection to it, unless there is some error that I find.

The Court: We will take a recess of just a few minutes, gentlemen, so that you can look it over.

(A recess was taken.)

The Court: Proceed, gentlemen. Have you looked it over, Mr. Flam?

(Testimony of Samuel S. Mackeown.)

Mr. Flam: Yes.

The Court: No objection to it?

Mr. Flam: No.

The Court: So received.

Mr. Lyon, Jr.: I offer the copy of the file wrapper [473] in evidence.

The Court: Is it a copy or a certified copy?

Mr. Flam: That is just what it looks like.

The Court: Just a copy, not a certified copy?

Mr. Lyon, Jr.: It is a broken up certified copy. The seal has been broken.

The Court: I understand there is no objection to it?

Mr. Flam: No objection.

The Court: So received and marked filed.

The Clerk: Plaintiff's Exhibit 17 in evidence.

(The file wrapper referred to was marked Plaintiff's Exhibit 17, and was received in evidence.)

Mr. Lyon, Jr.: The Schaffer patent has been referred to many, many times in the course of the trial, but it hasn't been introduced in evidence. We shall do so, and unless Mr. Flam objects, why I won't bother to have Dr. Mackeown identify it.

Mr. Flam: No objection. You may as well offer it.

Mr. Lyon, Jr.: Can we stipulate, Mr. Flam, that the Exhibits H and I are embodiments of the Schaffer patent disclosure? Those are the two Zenith devices.

(Testimony of Samuel S. Mackeown.)

Mr. Flam: I think we can.

The Court: So understood.

Mr. Lyon, Jr.: I hereby offer the Schaffer patent in evidence. [474]

The Clerk: Plaintiff's Exhibit 18 in evidence.

The Court: So ordered.

(The document referred to was marked Plaintiff's Exhibit 18, and was received in evidence.)

Mr. Lyon, Jr.: That is all, Dr. Mackeown.

Cross-Examination

By Mr. Flam:

Q. Do you have a copy of the Cunningham patent before you? A. Yes, I have, Mr. Flam.

Q. These pins or projections 56 that you were talking about are the only things that come into contact with member 57, is that right?

A. Yes.

Q. And they are carried by the wheel 55, you said? A. Yes.

Q. I think you mentioned something about the lever 51. Do you see that lever 51? A. I do.

Q. And it has an arcuate surface on its lower side? A. It does.

Q. And that lever is an entirely different lever than the one which supports wheel 55, isn't that right? A. It is. [475]

Q. When the Cunningham apparatus is used the first thing that happens when you push rod 45 upwardly as shown in Figure 6, the wheel 55 is

(Testimony of Samuel S. Mackeown.)

clamped by that arcuate portion on the lever 51, isn't that right?

A. That happens—that is not the first thing that happens.

Q. Well, what is the first thing that happens?

A. The yoke 59 releases the wheel 55, so that what I have called the hammer, consisting of the shaft 44 and the bolt 43, can come in contact with the top of the rod 40. That is when it is used as described in the Cunningham patent for measuring the content of carbon dioxide in flue gas.

Q. Then after the hammer 43 is positioned as shown in Figure 6, the next thing that happens is that the wheel 55 is clamped against rotation, isn't that right? A. That is correct.

Q. And then after it is clamped in rotation then further movement of the lever 50 and 51, causes actuation of the rocker 57? A. Yes.

Q. And by the time the wheel 55 reaches the co-axial position or before that, the wheel is restrained against all rotation, isn't it?

A. That is the method described in measuring flue gas. [476]

Q. And that is what happens with the Cunningham device—what you may term as the equivalent to the tappet is firmly engaged and restrained by the arcuate portion of the lever 51, before it ever gets into contact with the rocker 57, isn't that so?

A. That is true provided it is actuated by the push rod 45.

(Testimony of Samuel S. Mackeown.)

Q. So that the coaxial relationship of the wheel 55 and the rotatable member 57 is not the thing that keeps the wheel from turning, is it?

A. I am afraid I will have to have that question read.

(Question read.)

The Witness: Not if the wheel which is the tappet, is locked. If it is locked, then of course it cannot rotate, but if it is free to move it is the coaxial relationship that prevents movement.

Q. But in Cunningham it never is free to move when it is moved into contact with the rocker, isn't that so?

A. That is so provided it is actuated by the push rod 45.

Q. Now, in Cunningham the wheel 55, has its angular position determined by the position that the hammer, 43, assumes as shown in Figure 6, is that right?

A. That is the way it is described in the patent, yes. [477]

Q. Cunningham never sets his wheel 55, in accordance with the position of the rocker 57, does he?

The Witness: May I have that question again?

(Question read.)

A. Not for the purpose he uses the shaft positioning apparatus described.

Q. Now, in Plaintiff's Exhibit 11 in order to move the tappet so that it will return to the same

(Testimony of Samuel S. Mackeown.)

position, you have to maintain this braking lever in position at all times, isn't that right?

A. Move the tappet so it will come back to the same position?

Q. Yes.

A. Yes. The tappet has to be locked.

Q. And in the Cunningham device as shown by this exhibit, there is nothing to prevent the unlocking of that tappet just as soon as you release your finger from this lever with the arcuate surface, is there?

A. May I have that question again?

(Question read.)

A. You don't have to have the lock applied. You can move downwardly on the lever carrying the tappet until you have engagement between the tappet and the rocker and in that event the lock is not applied to the tappet.

Q. And how would you use this sort of a mechanism for adjusting the tappet for a radio receiving set without anything [478] further being added?

A. By pressing down on the lever carrying the tappet until the tappet is in engagement with the rocker, as I am now doing. Then manually adjusting the tuning condenser to the desired station, applying the lock and then that will always bring the condenser back to that position if the condenser is moved from that position.

Q. As soon as you release the brake then, of course, you can no longer use it for that purpose, can you?

(Testimony of Samuel S. Mackeown.)

A. Well, I think any tuner as soon as you release the tappet, the tappet then is free to move and you cannot tune the station—tune the set to the same station without clamping the tappet.

Q. Then the tappet or the wheel that carries the tappet in Cunningham, is not permanently held to keep its position after one operation, is it?

A. It isn't as shown in the patent. It could be.

Q. That is what I mean. It doesn't show that, does it?

A. It does not show that in the patent.

Mr. Flam: Your Honor, in view of this further explanation by the witness, which shows the lack of adaptability of that model to do anything useful, I renew my objection to the exhibit being received in evidence.

The Court: Well, it may be illustrative of some of the [479] features that are involved in the patent in suit. It isn't very lucid or very inclusive but it may stay in the record in view of the fact we have had so many of these devices and patents, not only in this court but in an Oklahoma court as well. The motion to strike will be denied.

Mr. Lyon, Jr.: I would point out in the Associated case before Judge Harrison that the Cunningham model was introduced not, however, with the condenser but it was pointed out in Judge Harrison's opinion on page 809, in the first column, in Paragraph 11, where Judge Harrison states:

"It is common knowledge that the front wheels

(Testimony of Samuel S. Mackeown.)

of an automobile must both rotate on a common axis. Or in other words, must be coaxial. This relationship is demonstrated in the Cunningham patent."

The Court: But I think this model is a little different from the one that was before Judge Harrison.

Mr. Flam: I don't think there was any, your Honor.

Mr. Lyon, Jr.: The model itself departs from the patent by adding the tuning condenser. Now, it has to be old as we all know——

The Court: We won't argue the case now. I have made my ruling. You may argue the case in your brief.

Q. (By Mr. Flam): Dr. Mackeown, when was that model made, Plaintiff's Exhibit 11? [480]

A. Well, it was made excluding the gear mounted on the shaft, corresponding to shaft 58 of the patent, and the tuning unit. The rest of the metal parts were made prior to the Associated case and this actual model was introduced in the Associated case.

Q. When was the condenser and the gear added to that model?

A. Oh, something about a year ago.

Q. And when the rest of the model was made—that is the part exclusive of the gears and the condensers, that was made after you learned about the Leishman patent in suit, wasn't it? Isn't that the case?

A. Yes.

Q. Who instructed you to have this model made?

(Testimony of Samuel S. Mackeown.)

Mr. Lyon, Jr.: I object to this line of questioning, your Honor. I can't see its materiality to the issues in this case. The device either shows the invention or it does not.

The Court: It may be elucidating to ascertain why it wasn't produced before precisely as it is now.

The Witness: I didn't have this model made up but I did compare the model after it was made with the Figure 9, for instance, of the Cunningham patent.

Q. (By Mr. Flam): You had nothing to do with the model itself? [481]

A. I had nothing to do with the making of the model itself.

Q. Did you give instructions as to what you wanted done in that model? A. No.

Q. Who did, do you know?

A. I don't know. I am thinking now of the original model. I don't know who did, Mr. Flam.

Q. And who gave instructions, do you know, regarding the inclusion of the condenser and the gears? Did you do that?

A. I think that was decided at a conference, which I attended. I don't know as anybody gave definite instructions.

Q. Now, in the Cunningham device isn't it true that there is a casing enclosing the parts mounted on the vertical wall here on the opposite side from that which carries the gears?

A. Yes. There is a casing shown in Figure 1

(Testimony of Samuel S. Mackeown.)

and marked 17, enclosing the shaft-positioning part of the Cunningham device.

Q. And the only part that would be shown in that form, that would be visible in that form, would be the Pen 62 and the chart and the shaft or little piece of the shaft 68? [482]

A. Those are the only parts that project outside of the casing 17.

Q. And they are the only parts that would be visible, is that right?

A. Yes; if you kept the cover on the case.

Q. The model, Exhibit 11, has no hammer or anything like that on it. When was that taken off of the model?

A. Oh, that was taken off a few days ago. It served no purpose in tuning a radio or positioning the tuning condenser of a radio set.

Q. But it was a very important feature of the Cunningham device, was it not, to adjust the wheel in accordance with the float?

A. It was used for the purpose indicated in the Cunningham patent, 1930192, to position the wheel 55.

Q. Wasn't that a very important part of the Cunningham device, to position that wheel?

A. If you use it for measuring flue gas I think it would be, as Cunningham did, but not if you adapt this device for tuning a radio condenser.

Q. Have you ever seen a complete Cunningham device with the tank and the float and so on?

(Testimony of Samuel S. Mackeown.)

A. No, I have not.

Mr. Flam: That is all. [483]

Redirect Examination

By Mr. Lyon, Jr.:

Q. Dr. Mackeown, referring to Model 11. What are the pins 56, as identified in the Cunningham patent mounted on?

A. They are mounted on a wheel marked 55 and form tappets—they are arms of a tappet.

Q. What is that wheel 55 mounted on?

A. That is mounted on a lever.

Q. How is it mounted on a lever?

A. It is mounted on a shaft which goes through the lever. The wheel 55 is mounted on the shaft going through the lever and therefore it moves with the lever.

Q. And what is the relationship between the pins or tappet 56, and that lever?

A. The pins or tappets 56, move with the lever.

Q. Do they move with respect to the lever?

A. No. They can have rotational movement about their shaft but there is no translational movement with respect to the lever.

Q. There is rotation, however, of the pins or tappet 56, with respect to the lever? A. Yes.

Q. Is that right?

A. Yes. The wheel 55 can be moved freely provided the [484] lock does not apply.

Q. Now, Dr. Mackeown, in the operation de-

(Testimony of Samuel S. Mackeown.)

scribed by you with Exhibit 11, is there a push rod 45, involved at all?

A. No. The push rod 45 is not necessary in that manual operation. Push rod 45 is a motor driven operation that is described in the Cunningham patent for automatic operation of the shaft-positioning device.

Q. And it is not used in the operation—the tuning operation described by you? A. No.

Q. In the operation described by you when you positioned the tappet is there any clamping by the upper lever on the tappet carrying the wheel prior to the initial engagement with the rocker?

A. No. There is no locking of the tappet unless the upper lever with the arcuate surface is pressed down against the wheel that gives a lock which can be applied at the operation.

Q. Is that such a lever—is that upper lever pressed down on the wheel while you are setting up the tappet?

A. No. I did not press down on the upper lever and lock the tappet while it was being set. [485]

Q. Now, Mr. Flam referred to a braking device in the Cunningham patent which has a certain function in the operating of the flue gas measuring device. Does that braking device to which Mr. Flam referred have any function in the tuning operation which you demonstrated?

A. Well, it does have the function of providing a lock which can be used to hold the tappet station-

(Testimony of Samuel S. Mackeown.)

ary and immovable so that this device can be used to position a shaft to the same position repeatedly.

Q. Can you point to any means in the prior art or any means which, based upon your experience you consider common, by which you could render the locking of the tappet permanent for the purposes of the tuning which you have demonstrated? By "permanent" I mean as Mr. Flam said "Take your hand away from the levers and then bring it back and retune to the same station."

A. Yes, any device which would clamp the two levers marked 50 and 51 together would make the lock permanent, and a screw device could be used so that the lock could be applied or released at will.

Q. Do you know of any specific instances of that in the prior art before this court?

A. Yes, the Schaffer patent has a locking device, which would be quite suitable. It is similar in a number of ways in that the locking device is applied to a separate lever [486] from that which operates the tappet, and that device could be easily adapted to Exhibit 11 and allow Exhibit 11 to be locked or freed at will. That is, the tappet on Exhibit 11 to be locked or freed at will.

Q. Turning to the Cunningham patent, the last page of the drawings, Figures 5 to 9, is there any casing shown in any of the views, Figures 5 to 9?

A. No, those figures simply show the shaft positioning device itself and are devoid from the equipment for pumping the flue gas through a tank to

(Testimony of Samuel S. Mackeown.)

absorb the carbon dioxide, and there is no casing shown for the shaft positioning device itself.

Mr. Lyon, Jr.: That is all, Doctor.

Mr. Flam: Just a question or two.

Recross-Examination

By Mr. Flam:

Q. Dr. Mackeown, by adding the Schaffer lock to the Cunningham device you would completely defeat the purpose of the Cunningham apparatus, wouldn't you?

A. The Cunningham apparatus includes a shaft positioning device incorporated in more elaborate devices. You certainly do not ruin the shaft positioning device of the Cunningham patent. You would, I think, ruin its operation for measuring the carbon dioxide in the flue gas.

Q. And that is what Cunningham expects to do, isn't [487] that right?

A. That is what Cunningham describes in his patent.

Q. So that, coming back to that question, by adding a lock, permanent lock, such as the Schaffer lock, to the Cunningham lever, it would make it impossible for Cunningham to do the thing for which he has designed his apparatus, isn't that so?

A. For the thing which he describes in his patent. He has more elaborate devices. This is just a part of the device shown in the Cunningham patent, and the whole device is for measuring gas,

(Testimony of Samuel S. Mackeown.)

and it would defeat the purpose of measuring gas.

A. And that is what Cunningham expects to do, isn't that what you said?

A. That is what he describes, let me put it that way. I don't know what he expects to do.

Mr. Flam: That is all.

The Court: I think we will hear the rest in the morning Mr. Lyon—10:00 o'clock.

(Whereupon, at 4:30 o'clock p.m., Wednesday, June 2, 1948, an adjournment was taken until 10:00 o'clock a.m., Thursday, June 3, 1948.) [488]

Los Angeles, California

Thursday, June 3, 1948, 10:00 A.M.

The Court: Ex parte matters?

(No response.)

The Court: Call the calendar.

(Other court matters.)

The Court: Call the case.

The Clerk: 5781-M, General Motors Corporation v. LeRoy J. Leishman, further trial.

The Court: Proceed, gentlemen.

Mr. Lyon, Jr.: Your Honor, I have here a stipulation which provides that the testimony or any part or parts thereof of certain witnesses may be read, received in evidence, and used upon the

trial in this action just as if the witnesses were on the stand and testifying in open court in the above-entitled action.

The Court: Is that correct, Mr. Flam?

Mr. Flam: Yes, your Honor.

Mr. Lyon, Jr.: Pursuant to this stipulation, I offer in evidence the testimony of Charles E. Kilgore as it appears on pages 322 to 326, inclusive, and 341 to 380, inclusive, of the Associated record, and I presume that rather than use the time that it would take to read this testimony into the record, it may be deemed read into the record and the matter given to the reporter for copying into the transcript. [491]

Mr. Flam: Is that all you are offering from that?

Mr. Lyon, Jr.: I shall offer——

Mr. Flam: In general, we may fix that right now. I think, in general, all those that you offer will be stipulated to in that manner, that we will waive the reading with your Honor's permission, and have them included in the record.

The Court: It is so understood and so ordered.

(The matter referred to to be copied into the record appearing on pages 322 to 326, inclusive, and 341, to 380, inclusive, of the record in the case of *LeRoy J. Leishman v. Associated Wholesale Electric Company*, appears in the following words and figures, to wit:)

“And, also,

CHARLES EDMUND KILGOUR

a witness called on behalf of the Defendant, being by me first duly cautioned and sworn, deposes and says, in answer to questions propounded to him by Marston Allen, Esq., of counsel for Defendant, as follows, to wit:

Direct Examination

By Mr. Allen:

Q. Will you please state your name?

A. Charles Edmund Kilgour.

Q. And your age and address?

A. 54. 346 Wood Avenue, Cincinnati, Ohio.

Q. You are connected with The Crosley Corporation?
A. I am.

Q. In what capacity?

A. My title is Chief Research Engineer.

Q. Were you with the company in the year 1937?
A. I was.

Q. In what capacity?

A. Same capacity as at present.

Q. Did you see Mr. LeRoy J. Leishman when he came to the Crosley Corporation in the fall of 1937?
A. Not to speak to him.

Q. Did you have any connection at that time with the conference with Mr. Leishman, or what he wanted with the Company?

A. None, except that after Mr. Leishman had left, Mr. Fred Johnston asked me to send some papers which Mr. Leishman had left with him, to our patent firm, Allen and Allen .

(Deposition of Charles Edmund Kilgour.)

Q. What is this carbon copy of a letter which I show you?

A. This is a letter dated October 4, 1937, which I wrote to accompany the papers which were sent to Allen and Allen.

Q. I ask that the carbon copy of letter be received in evidence and marked Defendant's Exhibit No. 4.

Q. Previous to the time that Mr. Leishman came there, had your company been working on push button tuning for radio [493] receivers?

A. It had.

Q. Who in your company had devised the particular push button tuning device on which you had been working at that time?

A. The idea was first suggested by Mr. Leonard Kellogg.

Q. Mr. Kellogg is now dead, is he not?

A. He is.

Q. Will you please describe briefly the Kellogg device?

A. The device was operated by pushing a button on the front of the receiver. This button moved its shaft longitudinally. The end of the shaft was equipped with a V-shaped member which engaged a pin mounted on a carriage and moved the carriage to a predetermined position dependent on the exact location of the pin on the carriage. The movement of the carriage through mechanism such as a rack served to rotate the rotor of the variable condenser.

(Deposition of Charles Edmund Kilgour.)

Q. Mr. Kilgour, are you familiar with the push button tuning device which is employed in the Crosley receiver 718-C, of which a sample was sent to counsel for Plaintiff in connection with this case?

A. I am.

Q. Do you have here with you a blueprint No. W-45654-D [494] of The Crosley Corporation?

A. I have.

Q. What does that show?

A. This shows a key finger or cam such as is employed in the tuning mechanism incorporated in the receiver model 718-C.

Q. What do the little numbers written at the top of that blueprint mean?

A. According to our drafting system, these numbers should indicate the receiver models in which this particular part is to be used.

Q. State whether or not that would indicate models in which the complete tuning device, including that little finger, such as is in 718-C, would be used?

A. Yes.

Mr. Allen: I ask that the blueprint be received in evidence as Defendant's Exhibit No. 5.

Q. I will show you a list, marked Defendant's Exhibit No. 1 for identification, and ask you what the list shows?

A. This shows the model numbers copied from the top of the blueprint in question.

Mr. Allen: I now introduce Exhibit 1 in evidence.

Q. Now, can you give me, Mr. Kilgour, the

(Deposition of Charles Edmund Kilgour.)

numbers in the 8 series, that is, ending with 8, which also include the tuning device of 718-C but do not happen to be listed on [495] the top of this drawing?

A. Yes. There were a certain number of automobile models, as follows: A-258, A-168, A-268, and a number of changed-over household models, including 1018, 1028, 618 and 818.

Q. Can you produce a copy of the papers that you sent to Allen and Allen with your letter of October 4, 1937, Defendant's Exhibit No. 4?

A. I believe this contract is a copy of the one I sent to Allen & Allen.

Mr. Allen: I should like to introduce the contract in evidence, and ask to have the same marked Defendant's Exhibit No. 6.

Q. Did you have anything to do with the Leishman matter in the fore part of the year 1939?

A. No.

Q. Did you see Mr. Leishman when he came down here in March of 1939?

A. No, as I remember it he did not visit our plant, but only the offices of Allen and Allen. Mr. Tyzzer went down to have a conference with him at those offices.

Mr. Allen: Direct Examination closed.

No Cross-Examination.

And further deponent saith not.

CHARLES EDMUND
KILGOUR." [496]

CHARLES E. KILGOUR

called as a witness on behalf of the defendant, having been first duly sworn, testified as follows:

The Clerk: Will you state your name?

A. Charles E. Kilgour.

Direct Examination

By Mr. Yungblut:

Q. Will you please state your age and residence, Mr. Kilgour, and occupation?

A. 54 years; 346 Wood Avenue, Cincinnati, Ohio; I am a research engineer for the Crosley Corporation of Cincinnati.

Q. Have you been chief research engineer of the Crosley Corporation since prior to 1937?

A. Yes.

Q. Can you state, Mr. Kilgour, when the Crosley automatic tuner, the accused device here, was developed?

A. We started development in 1937 on an automatic push button tuner device and this accused device was the result of that development in the latter part of that year.

Q. Do you remember when you first began to sell radio sets with that tuner on them?

A. In January, 1938.

Q. In the latter part of 1937 and January, 1938, what were your requirements for an automatic tuning device?

A. Of course, like any radio part, we look, first of all, to the cost and simplicity. We also, in a

(Testimony of Charles E. Kilgour.)

small way, make a great many small receivers. Then in the automobile [497] receiver the space available is quite limited. So we were interested in having a device that occupied a small space inside of the receiver and a small amount of space on the panel. In fact, Mr. Crosley had definitely set up the policy that he wanted us to develop a push button type of receiver. He was familiar with the old what we called the cash register type or Zenith type and, of course, other types with the telephone dial; and he thought the thing that would appeal to the public would be just the push button. The American public has more or less of a push button complex. They don't want to do anything more than they have to.

The Court: When did you say you started to develop this? Was it the latter part of 1937?

A. We were working on it most of the year 1937 and it finally came out and was finished up in the latter part of 1937.

Q. (By Mr. Yungblut): What can you say of the accuracy is quite acute. A very small motion of the dial will detune from a station. So the apparatus must be capable of repeating its operation very accurately. Actually, when you get down to the motion of the bar, it is within a very few thousandths of an inch, enough to give trouble.

Q. You stated that cost was one of your criteria. Was there any problem in connection with cost and accuracy in your department? [498]

(Testimony of Charles E. Kilgour.)

A. Of course, they always go together. The type of design we must have is such a design that the parts may be made by simple or low cost mechanical processes, principally those of stampings or press work. And, of course, all these are combined with screw machine parts, springs and things of that kind which, by the very nature of the design, will insure sufficient accuracy, without calling for accurately machined parts.

Q. Are the parts in the Crosley tuners simple stampings, as you say?

A. I believe they are excepting a few screws, springs and so on, that are usually present.

Q. What can you say or have you any information as to the cost of this Crosley tuner?

A. I believe it cost somewhere along about 60 cents, that is, the tuner itself without the condenser.

Q. Now, can you speak as to coaxiality in the Crosley tuner?

A. When the design was finished the experimental design, it was sent to the routine design or drafting department and, without any particular thought or attention being given to the subject, the design was made coaxial.

Q. What do you mean by that?

A. I mean that the nominal dimensions of the drawing show that the axis of the cam, as we call it, or tappet, [499] coincides with the axis of the rocker bar when the two are in engagement; but, of course, in actual commercial production there

(Testimony of Charles E. Kilgour.)

may be considerable misalignment. You see, the rocker bar is mounted on the ends of sort of a frame and the operating members that support the cam slide in slots on the front and back of the frame and there are a good many parts go together to construct the frame. So, that there is a possibility of the addition of ordinary engineering tolerances which might make quite a large inaccuracy in that respect.

Q. When you spoke of drawings, what drawings did you mean, when you spoke of final drawings?

A. Well, when they decide to put an article that has been experimented with in production it is turned over to the drafting department with the idea of the developing engineer and the drafting department, with their mechanical designers, go ahead and lays out the parts and checks their fitting together and so on, and gets the drawings in a condition to turn over to the purchasing department so parts may be bought.

Q. Then, these were drawings for the purchase of what, did you say?

A. Of parts for this tuner.

Q. As I understand you to say, Mr. Kilgour, you would turn over to your drafting or designing department these sketches, perhaps showing the general form of this thing? [500]

A. Yes.

Q. Those sketches, did they show coaxiality?

A. I don't remember that I saw the exact

(Testimony of Charles E. Kilgour.)

sketches that were turned over. I am not sure that they did.

Q. Did they have dimensions on them, for example?

The Court: Do not the sketches speak for themselves?

Q. (By Mr. Yungblut): Have we any of those sketches here? A. No.

Q. We do not?

A. Very frequently with a thing like this the engineer gets an idea and goes out to our model room and talks to the model maker and says, "I want you to make me up a model like this." He makes it up just enough to see that the principle works, and those ideas are turned over to the drafting room, often very informally. The engineer may go into the drafting room and explain to the draftsman just what he has in mind and work with him while it is being developed.

Q. What would you say as to the advisability of getting engineering when you are making a device up from simple stampings, anyway, in which there is not to be any machine work?

A. Well, of course, obviously the more skill you can get into the design the better off you are going to be when you get into the production. [501]

Q. Can you explain that a little more fully?

A. One of the old wisecracks around the engineering department is: "You want to put in a dollar's worth of brains and five cents worth of material." In other words, the more forethought

(Testimony of Charles E. Kilgour.)

and care that can be used in trying to appreciate the problems that will be gotten into, not only in production but in use, of course, the better off you are.

Q. You would say, then, that the Crosley device as laid out on the working drawings had coaxiality as a matter of design, wouldn't you?

Mr. Flam: Just a moment. Isn't that calling for hearsay evidence now?

Mr. Yungblut: Well, one of the drawings, Mr. Flam, is in evidence as part of the depositions. There is one of those working drawings there.

Mr. Flam: I thought this witness was testifying about something that has not actually been identified as yet.

Mr. Yungblut: Would you like to have him re-identify this drawing?

Mr. Flam: Well, I don't care. I don't know which drawing he means, that is all. It seems to me he is talking about some other drawings.

Q. (By Mr. Yungblut): I hand you a drawing marked Defendant's Exhibit 5, Mr. Kilgour, and ask you what that is.

A. That is a drawing of what was called the key [502] finger, referred to in this drawing as a tappet, a push button operated mechanism.

Q. Are there dimensions on that drawing?

A. Yes.

Q. Do those dimensions indicate any particular location of pivot point of the cam with respect to the contacting parts or fingers of the cam?

(Testimony of Charles E. Kilgour.)

A. Yes. They show that this——

Mr. Flam: Just a moment. I don't know whether you have laid a foundation for his testifying about drawings of that kind. I do not know whether he made them or who did make them.

The Court: Isn't he in a position, from stating his official position with the company, to explain a blueprint?

Mr. Flam: Well, all right.

Q. (By Mr. Yungblut): I would like to ask you whether you were familiar with this drawing at the time it was made and with the development with which it was concerned?

A. I was familiar with the development in general and I have seen this drawing many times. I don't recall just when I saw it the first time. Of course, it was made as one of our regular routine drawings and bears the routine date, etc., and went through the drafting room.

I believe there is an unanswered question there.

Mr. Yungblut: Is there, Mr. Reporter? [503]

The Court: When you refer to a date, do you refer to this February 8, 1938?

A. No; that is the rubber stamp of when they make the blueprint from the original tracing.

Q. This shows, then, that this was drawn on September 7, 1938?

A. No; that is a "No. 1." It is not very legible. I have since then examined the original tracing and find that under that "No. 1" there is a fleck

(Testimony of Charles E. Kilgour.)

in the tracing that makes it look like "9," but you will notice that the first change of this drawing, change A, was dated the 8th of February, 1938; so, of course, it must have been drawn before the first change was made.

Q. (By Mr. Yungblut): I would like to ask you, Mr. Kilgour, whether in practice in the actual Crosley device there is coaxiality.

A. I would say there was practical coaxiality but not mathematical or exact coaxiality.

Q. Well, why is that?

A. Well, because of the ordinary commercial tolerances in the various parts will give you some inaccuracies there.

Q. Would you state briefly how those inaccuracies might arise and in what parts?

A. Well, the frame, the part that supports both the [504] rocker bar and the slide members, and in the parts themselves, the frame and the cam and the hole in the slide member—any of those things can get off a little and then that throws the centers off.

Q. Have you found that makes a difference?

A. As far as I know, we have had no difficulty with any of these getting off-center, that is, being off-center has caused no difficulty.

Q. In the Crosley accused device, such as that in Plaintiff's Exhibit 22 or Plaintiff's Exhibit 10, is the plate or rocker attached to a shaft which is connected to the condenser?

(Testimony of Charles E. Kilgour.)

A. No. The shaft is merely a pivoting screw which merely supports the end of the rocker.

Q. What would be an effect of connecting the rocker to a shaft and then connecting that shaft in turn to the condenser?

A. Well, as is more or less obvious, it would probably extend the length of the apparatus slightly to bring the shaft out and put a gear on the shaft; also, to put in additional members which might cause some little back-lash or wind-up that is not present when the sector or gear is connected directly to the rocker bar.

Q. If when the Leishman reissue patent came out in August of 1938, the Crosley Corporation had ceased its [505] manufacture of these devices, what would have been its effect on the corporation and its business?

Mr. Flam: I am not sure whether this man is competent to testify about that.

Q. (By Mr. Yungblut): To your knowledge, Mr. Kilgour?

The Court: Just a moment. Read the question.

(Question read by the reporter.)

The Witness: Shall I answer it?

The Court: Just a moment. I presume this question is asked in support of one of your special defenses pleaded, is it not?

Mr. Yungblut: Yes, and in support of the intervening rights. I want to show what the situation would have been, or rather, the situation in

(Testimony of Charles E. Kilgour.)

which the Crosley Corporation found itself at that time.

The Court: The objection is overruled.

A. Well, August is the time of year when radio production is just getting into full swing for fall and winter markets. Of course, the wholesale market must go a little bit ahead of the retail market. So that the busiest times are often the latter part of August, September and October; and to upset the program at that time would, of course, as anybody can see, have very serious consequences. The tooling is all done, parts are bought, production lines are laid out, advertising already in the magazines or ordered, [506] and perhaps even quite a number of receivers already shipped to jobbers; and the most serious effect, of course, if the program were upset would be the delay in business before a new line could be engineered and tooled up and gotten on the market.

The Court: Any time you have to make a quick change in your production it has a serious effect upon your business; that is what you are trying to say, isn't it, in substance and would have had?

A. It certainly would.

Q. (By Mr. Yungblut): I think you have given me a general answer, Mr. Kilgour. You know that that was true in connection with the particular device as exemplified by Exhibit 10?

A. Oh, yes. That device was used in a larger per cent of our models that season. We had started to ship those models in June and July—May, June

(Testimony of Charles E. Kilgour.)

and July. We had our jobbers' meeting, as we call it, along in May, and the shipments had actually started shortly after that on some of the models; and then, more and more models were getting into production, so that by August we were in full swing.

The Court: May I ask counsel, if the device was an infringement that would not make any difference, would it?

Mr. Yungblut: An infringement of the reissue?

The Court: Assuming that it was an infringement of [507] the original patent, it would not make any difference how much inconvenience was created?

Mr. Yungblut: Not of the original patent; no.

The Court: But it is your claim that the question is directed as to the reissued patent, is it?

Mr. Yungblut: Yes.

Q. When, as you have testified, the final drawings for the purchase of the parts and tools were drawn up and contained this element of coaxiality as a matter of design, did you consider that there was anything inventive about that?

The Court: I did not hear that question.

(Question read by the reporter.)

Mr. Flam: I object to that as calling for a conclusion. I think that the court is supposed to know——

The Court: It is certainly calling for a conclusion and trying to get the so-called expert to——

(Testimony of Charles E. Kilgour.)

Mr. Yungblut: I will change the question, if your Honor please.

The Court: —tell the court what to do; I am very much in accord with Judge Yankwich's discussion on experts. If you have read that you will limit yourself somewhat.

Mr. Yungblut: I will do so. I will change the question.

Q. Did the company make any attempt to patent the idea of coaxiality? [508]

Mr. Flam: I object to that as irrelevant and immaterial to this issue.

Mr. Yungblut: I think that is a question of fact, if your Honor please, showing what the company thought of it at the time.

The Court: Ask him if there was any application for any patents made on this push-button tuning device.

Mr. Yungblut: I will do so.

Q. Were there any applications for patent made on the Crosley push-button device?

A. Yes.

Q. Was coaxiality claimed in those applications?

The Court: I think that those applications speak for themselves if the patents were issued.

The Witness: They are not.

Mr. Yungblut: They are not issued. They are still pending, if your Honor please.

Mr. Flam: That is one of the applications, I think, that we talked about.

The Court: That is with the interference?

(Testimony of Charles E. Kilgour.)

Mr. Flam: Yes.

Q. (By Mr. Yungblut): As to the application to which you have referred, does that application show coaxiality? I will call your attention to the Howard J. Tyzzer application, Serial No. 192,258, marked for identification as [509] Plaintiff's Exhibit 21.

The Court: May I ask counsel, for my information, is this the only application made, this one set forth in this?

Mr. Yungblut: No. There were several others.

The Court: Several?

Mr. Yungblut: Yes. None of them showed coaxiality, as a matter of fact.

Mr. Flam: I do not know how far your Honor would like to go on that with this type of testimony. I do not think it is going to be of much value one way or the other.

The Court: Well, the only thing is, it looks to me—I want to find out how consistent the defendants are here. They claim that your patent is invalid and then they turn around, make an application for a patent for the same thing. I am rather interested to see.

Mr. Yungblut: As a statement of counsel, if your Honor please, there were other applications, none of them relating to coaxiality.

A. The drawings show in this particular application several types of operating members which work on the rocker bar. One type is the so-called

(Testimony of Charles E. Kilgour.)

tappet type, but the tappet shown is not of the coaxial type.

The Court: You have not claimed the rocker bar and tappet device is patentable, have you?

A. Some of the combinations of the apparatus.

Q. (By Mr. Yungblut): That application and the others [510] you remember, weren't they on push buttons?

Mr. Flam: Just a moment. I object to asking about applications that are not here. The applications speak for themselves.

The Court: I think your objection is well taken. Objection sustained. If you are going to refer to any other application, why, the court would like to see them. It would be very much interested in them.

Mr. Yungblut: Yes.

The Court: Because you have made a claim here of invalidity.

Mr. Yungblut: Yes.

Q. Isn't this but an application on features of the push-button mechanism?

Mr. Flam: Will you read that? I can hardly hear.

(Question read by the reporter.)

Mr. Flam: Objected to as leading.

The Court: I think it is trying to sum up something that the court could find out by reading it, perhaps.

A. As I remember this application, with which

(Testimony of Charles E. Kilgour.)

I was familiar at the time, it is on the combination of the push-button mechanism operating a rocker bar, but no mention is made of coaxiality, no claim is made for coaxiality.

Q. (By Mr. Yungblut): Were you familiar, Mr. Kilgour, with the applications that were filed on this device?

A. Yes. At that time one of my duties was to make [511] contact with our patent firm, the Allen & Allen Company on patent matters.

Q. Were any applications drawn or filed claiming the feature of coaxiality? A. No.

The Court: Just a moment now. I am not going to admit that. I think that you are asking this witness to testify to something that is in writing and if you want to get that in evidence, why, you get your applications in.

Mr. Yungblut: I would like to have the witness' answer for the purpose of the record.

The Court: I am not going to admit it, because you know and I know that you can't ask a witness here to testify to the contents of a written document when that written document is available.

Mr. Yungblut: Yes; and I will secure and introduce the patent application.

The Court: Then, if you do it, you have the record before us.

Mr. Yungblut: Of course, that line of proof, if your Honor please, simply went to the point that there were not any such applications.

The Court: All right. You have a method of

(Testimony of Charles E. Kilgour.)

proving it and you know how to prove it without using secondary evidence.

Mr. Yungblut: Very well. [512]

The Court: It is apparent to the court that the reason that you are trying this way is that you do not want your applications to appear for the court to see what you were claiming. Now, that is the attitude that the court takes in the matter, if you are suppressing the contents of your application, without disclosing the full set-up.

Mr. Yungblut: The applications are not here, if your Honor please. They are in Cincinnati.

The Court: I know, but you came here to try this case.

Mr. Yungblut: I will be very glad to introduce them.

Q. I want to ask you one other question, Mr. Kilgour. You spoke of an engineer in drawing up these drawings making the pivots coaxial. What was the position in the company of the man who did that, if you know?

Mr. Flam: Will you read that question? I can hardly hear.

The Court: I would like to have you read it. For some reason or other I can't hear you myself, or it is with difficulty that I can hear you.

Mr. Yungblut: I will speak a little louder.

(Question read by the reporter.)

A. He was one of our design engineers in the radio department.

(Testimony of Charles E. Kilgour.)

Mr. Yungblut: You may cross-examine. [513]

Cross-Examination

Mr. Flam: I think there is a later model of a Crosley mechanism here in evidence.

The Court: There is one that seems to be all ready to connect up. I am curious to try it.

Mr. Flam: I think you have reference to this chassis here. I think I had better introduce the cabinet and the loud speaker in evidence, too, your Honor. This will not be sufficient for trying.

The Court: You would not admit it, would you?

Mr. Flam: Oh, I think it is a good set.

Q. I show you Defendant's Exhibit F. I suppose you know what that is, being chief engineer of Crosley Corporation? That is one of their designs.

A. Let me correct you. Not chief engineer, chief research engineer.

Q. I beg your pardon. A. Yes.

Q. Do you know when that design was first made for the Crosley Corporation?

A. I am afraid I can't give the exact date, but I will say it was some time after the other one, or perhaps—well, perhaps late in 1938.

Q. How late? Was it after August, 1938?

A. Well, I would think so; yes. [514]

Q. You think it was?

A. I know this—I don't remember exactly, because I know the man who worked at this—the only

(Testimony of Charles E. Kilgour.)

substantial difference here is in the push rod we called the skate key type because it operates more or less like a skate key, with a right and left-hand thread; and a man worked up that type of key and it laid around in his desk for a good many months before it was decided to put it into production. And then later on, quite a bit later on, there came the particular application where it seemed to be suitable and it was placed in production. You see, this has the difference you do not lock that cam by the screw; you rotate the position of the cam by turning this screw; so you merely turn the knob on the front of the set to adjust it, push it in and turn this knob and instead of turning your main knob; so it gives you a slightly different type of construction which is somewhat more convenient and somewhat more expensive than the other.

Q. When did it first go on the market?

A. I am sorry I can't remember. I would say somewhere around the last of '38 or the first of '39, and I am not sure about it. That is very inaccurate.

Q. You said that it was developed about the last of 1938. And it went on the market after it was developed?

A. That is when it was developed for commercial development to go on the market. [515]

Q. For what year's set, do you remember? Would it be for the 1939 year or for 1940?

A. It was first used, I would say, in '39, but I

(Testimony of Charles E. Kilgour.)

am not quite—that is only very inaccurate information.

Q. Do you know who the chief engineer was for Crosley Radio Corporation in the summer of 1937?

A. If you will allow me a little explanation of our set-up, we have several engineering departments. We make refrigerators and so on. I suppose the man you are interested in was the chief engineer in charge of radio design?

Q. I will qualify it that way.

A. What was the date you mentioned?

Q. In the summer of 1937.

A. His name was Howard J. Tyzzer.

Q. He was the chief engineer?

A. Of radio design.

Q. Wasn't there a Mr. Johnston or Johnson there?

A. No. No; Mr. Johnston was there in—did you say 1937?

Q. 1937.

A. I beg your pardon. You are correct. Mr. Johnston left the last of '37. And Mr. Tyzzer took over the first of '38 as chief engineer, although Mr. Tyzzer was all that time directly in charge of radio design under Mr. Johnston who had extra duties. He was really chief [516] engineer of the whole plant.

Q. Mr. Johnston you mean? A. Yes.

Q. Under his category would fall not only radio but these other Crosley developments mentioned?

(Testimony of Charles E. Kilgour.)

A. That is right.

Q. Do you know when the Crosley Radio Manufacturing Company first determined to put out a push button tuning device?

A. Well, I think it was very early in '37 or in the winter of '36 Mr. Crosley propounded the problem that he wanted a push button radio receiver.

Q. You have nothing except your recollection about time?

A. That is correct, except I know we started to work, one of our men started experimenting on such a device in the late spring of '37.

Q. How long did the experimentation take?

A. Well, he worked all summer and in the fall we decided to go into production on his device, but it seemed to be a rather difficult one to work out practically; and Mr. Tyzzer got the idea of this other mechanism and we switched over to it and went ahead with it.

Q. In other words, there was a prior development in connection with push button tuners antedating the type that [517] we are talking about here?

A. Yes, sir.

Q. Did that have a treadle bar on it, do you know?

A. No.

Q. You have mentioned Mr. Tyzzer. Is Mr. Tyzzer still engineer, chief engineer in charge of the radio department?

A. No; he is not. He left last June.

Q. Who is the engineer now?

(Testimony of Charles E. Kilgour.)

A. Mr. Clarence Felix, that is, in charge of the radio engineering. Mr. Tyzzer started out here for the first trial and got to Indianapolis and was called back.

Q. You have talked about this application, Plaintiff's Exhibit 21 for identification.

Your Honor, I might offer that now in evidence. I think we have had enough foundation for it now.

The Court: It will be admitted.

Mr. Yungblut: No objection.

Q. (By Mr. Flam): Do you know the contents of that application?

A. Well, I would say I do, without studying it, because we had several, but I may be a little bit confused in my mind after this interval of time.

Q. All I wanted to ask was: Do you know whether or not that application is the one which shows the tuner [518] mechanism such as incorporated in Exhibits 10 and 22?

A. May I see that exhibit?

Q. That file wrapper? A. Yes.

Q. I do not want you to take the time to examine it. Only if you know.

A. I will just look at the drawing. That will be enough. Yes; this shows a drawing or a development very closely equivalent to the commercial article used in these exhibits.

Q. I show you the back cover of August, 1937, Radio Retailing, Plaintiff's Exhibit 6. Does that back cover show anything with which you are familiar?

A. The inside back cover?

(Testimony of Charles E. Kilgour.)

Q. The inside back cover.

A. Yes; that shows some radio receivers of our Crosley Corporation.

Q. That is an advertisement of the Crosley line at that period, I presume.

A. That is right.

Q. I call your attention to that circular figure in the lower left-hand corner. What is that? What kind of a mechanism is that, if you know?

A. As it is called in the advertisement, it was a quick tune dial. In other words, it is this type which has [519] been referred to heretofore as the telephone dial type.

Q. Is that the kind of dial that is shown in one or two of the other figures here? I call your attention to what is termed a Fiver Console.

A. Yes; that seems to have the same type of tuner.

Q. Will you explain, if you are familiar with that tuner, how it was supposed to operate?

A. Very roughly, it merely rotated the—it was connected to the condenser mechanism so that if you put your finger in the button marked for a certain station and rotated it down to the bottom where you would hit a stop, it approximately tuned in that station, only very approximately.

Q. I suppose you used what has been termed automatic frequency control circuit in connection with that?

A. I don't remember, but I don't believe an

(Testimony of Charles E. Kilgour.)

automatic frequency control circuit would have been sufficient to correct for the inaccuracies there. You would get it approximately and then you would take hold of the manual control and finish up tuning. It was more or less of a makeshift, I must admit. It was not much of an engineering proposition.

Q. Do you know when the Crosley Corporation developed that telephone dial type of tuner mechanism? [520]

A. Of course, with this magazine in front of me, I would say they had it on the market in 1937.

Q. It was developed before then, of course?

A. It must have been developed some time before this publication.

Q. What is the usual practice, if you know, about these ads? Would ads be inserted in magazines about contemporaneously, or a month or so after a set was developed and ready for market?

A. Of course, advertisements usually must be placed some time ahead of the publication date.

Q. About how far ahead would you say?

A. I am not an advertising man. It depends on the magazine, as I understand it, but a month or so, something of that kind, maybe two months in extreme cases.

Q. That Crosley set shown on that back cover must have been ready to go on the market at least a month before that magazine appeared?

A. I would say the probabilities were it was

(Testimony of Charles E. Kilgour.)

ready for our line, which is usually announced early in the summer of each year.

Q. Early in the summer. By that you would mean——

A. June or July.

Q. You would mean May, June or July?

A. Yes. [521]

Q. In other words, you would have to go back a few months before the ad appeared before the ad would be approved, I suppose?

A. That is right. But sometimes they work very fast—so fast that sometimes ads are wrong. Sometimes changes are made after the ad is ordered, unfortunately.

Q. You said something about the development of this tuner exemplified in Plaintiff's Exhibit 10. I think you said that some sketches were made and then it was developed on a drafting board or something of that sort. Did you develop this?

A. No.

Q. Did you make these sketches? A. No.

Q. Do you know who did?

A. Of course, the actual draftsman who detailed that part, his name or initials appear on there. I don't know whether I would know him from the initials or not. Howard Tyzzer made the original sketches which portrayed the general idea.

Q. Didn't you assist him in the development of that device?

A. My position is one that I do not ordinarily get into the regular developments; but if on some

(Testimony of Charles E. Kilgour.)

problems where the designer feels that two heads are better than one, I am [522] sometimes called in. I remember I was called in particularly on the development of a locking means for this cam in our device.

Q. You were? A. Yes.

Q. What kind of a locking means did Mr. Tyzzer have before you got in on it?

The Court: Gentlemen, I notice the hour, so we will adjourn until 2:00 o'clock.

(Recess until 2:00 o'clock p.m. of this day.)

Afternoon Session

2 o'Clock

(Appearances as last noted.)

The Court: You may proceed, gentlemen.

CHARLES E. KILGOUR

recalled.

Cross-Examination

(Resumed)

By Mr. Flam:

Q. I think we were talking about the locking mechanism on the accused Crosley device when we adjourned, such as shown in Exhibit No. 10, and I think you said that you devised or improved the locking mechanism on this device.

A. I said I got in on some of the work on it. The general form had been devised some time

(Testimony of Charles E. Kilgour.)

before but some difficulties came up and some details and the exact shape [523] and so forth were worked over.

Q. By "were worked over" do you mean that you worked them over?

A. I helped the engineer and the designer who was on that more in the theoretical line. He was worrying about what was involved in such a device, that is, what were the stresses and so forth and what was necessary to improve it, and I tried to work out the theory of it.

Q. Is that Mr. Tyzzer you are talking about?

A. Mr. Tyzzer and one of the draftsmen or engineers. The development was all under Mr. Tyzzer's direction.

Q. Is the form of locking device in Exhibit No. 10 the same as disclosed in this application Plaintiff's Exhibit No. 21?

A. Substantially so; the same general principle.

Q. I mean is the structure the same aside from principle. It is not exactly the same, is it?

A. I would say within the accuracy of a patent drawing it is.

Q. What do you mean by within the accuracy of a patent drawing?

A. A patent drawing shows more or less the general idea, without having mechanical exactness, very frequently.

Q. Was there anything else in connection with this tuner mechanism, Exhibit No. 10, that you had

(Testimony of Charles E. Kilgour.)

anything to [524] do with in the way of development?

A. Not specifically; no. In general, I was familiar with what was going on.

Q. Over how long a period was this process of development of that tuner taking place?

A. I think the first suggestion was made in October, 1937, and the device was actually put on the market in January, 1938, so that the development must have been finished about the end of 1937 at least.

Q. And what it was intended to displace was what we have been calling the telephone dial type, is that right?

A. Not necessarily. The telephone dial type was used commercially just before this but it could hardly be regarded as an equivalent.

Q. I mean that in between the time the Crosley Radio Corporation was marketing the telephone dial type and this type there was no other type of mechanical tuning?

A. No other type on the market; no. The automatic—well, you must remember that, beginning some time back, we had what was called electric tuners which were the push-button type tuner.

Q. I am referring to mechanical tuner.

A. And they continued on to this time and some even later.

Q. I was referring to a mechanical tuner.

A. There was no mechanical type. [525]

(Testimony of Charles E. Kilgour.)

Q. And I assumed you were referring to the mechanical type. I think we understand that now.

A. No; there wasn't.

Q. So that the telephone dial type, you might say, was dropped in favor of the treadle bar type, if I might call it that?

A. I would say so. Our particular telephone dial was never very successful. It would have been dropped anyway.

Q. I think you stated on your direct examination that the parts for the treadle bar type would have to be made to fit close tolerances in order to be accurate. Is that what you meant?

A. I don't believe so.

Q. What was it that you said there in that regard?

A. I don't remember exactly, but the sense of it must have been that we try to make our designs such so that, with parts that could be rather cheaply made, we could obtain the necessary accuracy.

Q. What would be the tolerances that you could tolerate for quantity production in connection with these devices?

A. Well, one of our standard practices on our drawings is to call for tolerances of plus or minus .015; but that may be misleading in some cases because, of course, [526] when a piece is made off the die they may be all just alike; so it is a matter of getting that die accurate enough; and usually it runs much closer than that but as a die wears it

(Testimony of Charles E. Kilgour.)

may change somewhat. We try to make our design to accommodate such things. If you notice—have you Exhibit 10 here? For instance, where the slider bars go through the frame they are held in there by a secondary bar that holds them down and the back—the front this is, where they go through the frame there is a little washer there. When you tighten this screw it pulls that washer down against the edge of the bar and holds it at a certain pressure against the bottom slot; so you do not have to have great accuracy of fit between the width of the slider and the width of the slot.

Q. Would .005 of an inch be too close for manufacturing purposes in the way of tolerances?

A. As I say, that is variable. No. Some parts of it may have to be held closer than others and you would not care if it was 15 or 20; and in this particular case, judging from the variation, I do not believe you have to have extremely close tolerances there.

Q. I notice in your deposition that was taken in Cincinnati the blueprint identified as Defendant's Exhibit 5 shows a series of numbers designating the model numbers of the sets. The prefix "A," does not that mean automobile type? [527]

A. I think it does. I am not sure. In some cases it did; in others it did not. Our system differs.

Q. What is the purpose of the "A" if not to denote automobile type?

(Testimony of Charles E. Kilgour.)

A. We have had various systems and they run out of serial numbers and they put a letter in this case. I think in this case the "A" denoted automotive type.

Q. Automotive type? A. Yes.

Q. I think I understood that the last number, such as "8" or "9" would mean the year 1938 or 1939?

A. That was true at that time; yes.

Q. When Crosley Manufacturing Company gets ready with a radio set to go on the market how long a period is required to make the tools and dies?

A. Oh, that is rather variable. Anybody that has been in the radio business knows it is rather a hectic affair sometimes. Sometimes we have time for ordinary commercial production and other times somebody brings out something we feel we have to meet and we jump into it fast.

Q. When were the tools and dies completed for the push buttons and their associated mechanism of the Exhibit 10?

A. They must have been completed in time to make deliveries of the parts in January or December of 1937 and [528] 1938—not respectively, because we actually sent sets out in about the middle of January.

Q. The tools and dies were all completed at that time? A. They must have been.

Q. When you change——

A. Of course——

Q. Go ahead.

(Testimony of Charles E. Kilgour.)

A. I was going to say that that particular model. Of course, we brought out subsequent models and they did not get into production before the summer.

Q. So far as the parts for the push buttons were concerned you had the same mechanism for all the models, didn't you?

A. So far as the push, that is, the actual individual push rod.

Q. Yes.

A. But so far as the total device; no; because some sets had four buttons, some had six, some had five, and that required different frames and different rocker bars.

Q. Now, when you changed over, for example, from the telephone dial type to the push-button type, you needed a new set of dies to accomplish that, tools and dies, to accomplish that change, as I understood? A. Yes. [529]

Q. Now, when you were going into 1939 production instead of 1938, for example, utilizing the push-button principle, did you have to make new dies for the 1939 models?

A. Well, to some extent probably. Of course, whatever parts, individual parts, could be used are held over; that is, in this case if we used the same push-rod mechanism, of course, tools and dies would still be used in '39. If, for instance, we had a new type of die, which is one of the faddish things on a radio set and is changed quite frequently, we would require a new bracket here to accommodate

(Testimony of Charles E. Kilgour.)

the different types of pointer or what not that we had.

Q. As a matter of fact, every year you had to make a lot of new dies to fit the particular year's production, didn't you? A. That is correct.

Q. I think you mentioned that the cost of a push button was 60 cents?

A. A push-button mechanism.

Q. Mechanism. I just wanted to get——

A. Without the condenser.

Q. I just wanted to get at how much that included. Did that include everything in one individual push button or a bank of push buttons or what?

A. Well, to be frank, my information is not very [530] exact. I wired for that a day ago and got it; and I said I wanted the mechanism without the condenser or knobs.

Mr. Flam: Well, then, I move to strike that part of the testimony.

The Court: What difference does it make if it costs 60 cents or \$60?

A. The answer I got back was 65, and I think that is right. They might have included this panel in some way. You see I did not say to leave the panel off; so there is some doubt there, but it is somewhere under 65 cents.

Mr. Flam: Well, it does not matter, as his Honor says.

Q. In these treadle bar tuners, such as Plain-

(Testimony of Charles E. Kilgour.)

tiff's Exhibit 10, do you know what the angular movement of that treadle bar is supposed to be?

A. I have never checked it exactly but it is my impression—I don't know how accurate it is—it is around 60 degrees.

Q. So there is a 60-degree movement of the treadle bar between its extreme positions?

A. Something like that.

Q. That is what you mean? A. Yes.

Q. And it does not go completely to the——

A. That is right.

Q. It does not make a complete revolution?

A. That is right.

Q. It is very definitely stopped between——

A. It could be very easily calculated by comparing the radii of that gear because this goes to 180. Divide that by 180 degrees by the ratio of these radii.

Q. I did not want anything very accurate. I just wanted the general statement. It is about 60?

A. That's about right.

Q. And I think that is about right. How is the rocker in that mechanism operatively connected to the condenser in the Exhibit 10?

A. There is a mechanism which might be called a sector gear because it is only part of the gear which is riveted directly to the rocker bar or rocker plate, whatever you call it.

Q. The important thing about that transmission mechanism is that it moves the condenser or other

(Testimony of Charles E. Kilgour.)

tuning element in accordance with the movement of the rocker, is that right? A. Correct.

Q. I want to show you the February, 1938, issue of Radio Retailing, again that inside back cover. Is the advertisement carried on that inside back cover an advertisement of the set incorporating these mechanical push buttons? A. It is.

Mr. Flam: I want to offer the back cover of this issue [532] of Radio Retailing, February, 1938, in evidence.

The Court: May I ask the purpose of it? I am trying to follow counsel and I am trying to find out for myself the purpose.

Mr. Flam: I do not believe this witness is going to be put on his guard about this. The purpose back of it is that these ads all show commercial advertisements of this type of mechanism in February, 1938, and already to go; and on the witness' own statement this morning, he said that they must have been already to go, at least a month or so before the ads appeared; and that has a bearing on this question of intervening rights.

The Court: That is on your theory of the law that if they were prepared to manufacture these articles before the reissue——

Mr. Flam: Before the original patent was issued.

The Court: Before the original patent. In other words, I can't state it in the exact language that I want to state it, but I remember you stating it in your pretrial brief.

(Testimony of Charles E. Kilgour.)

Mr. Flam: Yes, your Honor is right.

The Court: Your theory of the law on that question.

Mr. Flam: Yes. That is the basis I am putting this in on. These ads——

The Court: I would like to make inquiry. Your original [533] patent was not issued until after this date, was it?

Mr. Flam: I don't know the exact date of it. I think it was——

The Court: I have it here.

Mr. Flam: February 15, 1938, I am informed.

The Court: What effect does this have, assuming that this evidence is true, that in the latter part of 1937 these people, the Crosley people, developed a push button using a similar device, that is, that you claim is infringing your device?

Mr. Flam: The theory, of course, is my aspect of the theory of intervening rights. Under that theory, if they began the manufacture of a device which becomes an infringement after a patent issues, but they began to manufacture before the original patent issues, then we have a different situation in the case where some one happens to start later.

The Court: What is the legal effect? I may be showing my lack of knowledge. But what is the legal effect of saying, for instance, two people develop a similar device approximately at the same time?

(Testimony of Charles E. Kilgour.)

Mr. Flam: Well, of course, if the Patent Office believes that there is some conflict between the inventors on the question of priority, it goes through a very complicated system.

The Court: We will assume, for instance, that your [534] patent was issued in February, 1938, and that in December, 1939, the defendant developed a device that, according to your contention, infringes your device.

Mr. Flam: I think I know what your Honor means. In other words, if we have a case of an ordinary patent and no reissue involved at all, and that patent issues after someone starts making that device, there is no such thing as intervening rights in that case.

The Court: But who has the first claim to that device? Is it the first man that asked for it?

Mr Flam: Often that is the case but, if there are two rivals, both of whom desire to obtain a patent, the Patent Office decides who is the first inventor in point of time and to the first inventor goes the patent protection. In this case there is no question of priority because we date our application back to December, 1934, and at least the presumptive date of invention is no later than that. Of course, the Crosley Corporation does not pretend it was doing anything in connection with this field until long after December, 1934. So there is no question of priority here. I don't know whether I have answered your Honor's question or not.

(Testimony of Charles E. Kilgour.)

The Court: You have answered it.

Mr. Flam: I don't think your Honor ruled on this. I offered this in evidence. [535]

The Court: Is there any objection?

Mr. L. S. Lyon: No objection.

The Clerk: Plaintiff's Exhibit No. 32.

The Court: One of the arguments in this case may be on the very theory of law that you are advocating.

Mr. Flam: Yes.

The Court: That is one of the points that you gentlemen will have to argue.

Mr. Flam: I am afraid so.

The Court: All right.

Q. (By Mr. Flam): I show you page 141 of the issue of Motor for April, 1938, and ask you whether that page discloses an advertisement by the Crosley Corporation of a set incorporating the push button mechanism of Exhibit No. 10.

A. It does, or not Exhibit No. 10. You see, Exhibit No. 10 is for this particular dial and the automobile receiver had an entirely different dial. So there would be a different set of arms up here or something of the kind.

Q. But the push button was the same, is that right? A. I believe so.

Mr. Flam: I offer that page in evidence, your Honor.

Mr. L. S. Lyon: No objection.

The Court: Admitted.

(Testimony of Charles E. Kilgour.)

The Clerk: Plaintiff's Exhibit No. 33.

Q. (By Mr. Flam): I have two more here. The first is page 43 of the April, 1938, issue of the Automobile Guide. [536] Will you answer the same in connection with that advertisement?

A. It appears to be the same advertising copy as in the other issue.

Mr. Flam: I offer that page in evidence.

Mr. L. S. Lyon: No objection.

The Court: Admitted.

The Clerk: Plaintiff's Exhibit No. 34.

Q. (By Mr. Flam): Last, I show you page 15 of the issue of April, 1938, of the Automobile Trade Journal. Will you answer the same question with regard to that advertisement?

A. It appears to be the same advertising copy.

Q. To your knowledge, do you know whether there were any other advertisements about that period similar to these shown in these magazine pages?

A. Not from my personal knowledge, although I know we did quite a bit of substantial advertising.

Mr. Flam: I offer page 15 of the April, 1938, issue of the Automobile Trade Journal in evidence.

The Court: Admitted.

The Clerk: Plaintiff's Exhibit No. 35.

Mr. Flam: That is all.

Mr. Yungblut: No redirect examination.

Mr. L. S. Lyon: At this time the defendant desires to offer in evidence a certified copy of the file

wrapper and contents in the matter of original patent No. 2,108,538. [537]

The Court: Is that the 1934 or the 1938 patent?

Mr. L. S. Lyon: That is the file wrapper upon which the original patent containing this original claim 5 was issued and the application was filed on June 19, 1937, so it seems.

Mr. Flam: I think that is the patent upon which the reissue was based; not the 1934 case.

Mr. L. S. Lyon: Not the parent one?

Mr. Flam: No.

The Clerk: Exhibit H.

Mr. L. S. Lyon: As Exhibit I, we offer a certified copy of the file wrapper of the reissue patent in suit No. 20,827. Those two file wrappers together, your Honor, will give you the Patent Office actions and the replies thereto and show what claims were allowed and how they were distinguished from claims that were rejected both in the original patent and in the reissue patent. We call Dr. Mackeown.

Mr. Lyon, Jr.: I also offer in the same manner and to be copied into the transcript the testimony of Gibson Yungblut as the same appears on pages 475 to 484 of the Associated record.

Mr. Flam: No objection to that, your Honor. I think we stipulated to that.

The Court: The same order with respect to that.

(The matter referred to to be copied into the record appearing on pages 475 to 484, inclusive, of the record [538] in the case of *LeRoy J. Leishman v. Associated Wholesale*

Electric Company, appears in the following words and figures, to wit:)

GIBSON YUNGBLUT

a witness for the defendant in sur-rebuttal, being first duly sworn, testified as follows:

The Clerk: Will you state your name?

A. Gibson Yungblut.

Direct Examination

By Mr. L. S. Lyon:

Q. Mr. Yungblut, you are one of the attorneys for the defendant in this case and a member of the firm of Allen & Allen, patent lawyers, of Cincinnati, are you not? A. Yes.

Q. In 1937 and 1938 you were, at that time, as well as now, attorneys for the Crosley Corporation?

A. Yes.

Q. I show you Plaintiff's Exhibit No. 38. Did you write that letter to Mr. Leishman?

A. Yes.

Q. You have heard Mr. Leishman's statements a moment ago as to the fact that, if you had obtained a copy of the file wrapper of his patent Serial No. 2,084,851, or had examined or known of his foreign patent applications, you could have found therein a reference to or a disclosure of a device disclosed in the reissue patent involved in this suit? You heard that testimony, did you not?

A. Yes.

Q. Will you please tell the court whether or not

(Testimony of Gibson Yungblut.)

you did obtain, prior to March, 1938, a copy of the file wrapper of the patent mentioned in your letter, Exhibit No. 38, or had any knowledge of the contents therein or of the device described in the re-issue patent here in suit or of any foreign patents or patent applications of Mr. Leishman's describing such a device?

A. No; we had no file history of patent No. 2,-084,851 until March of 1938. This is the first time I have ever heard of the foreign patents. I think your question had a third part which I have forgotten.

Q. Well, those are the two points I was interested in. I don't remember a third part. With reference to the patent applications that were filed on behalf of the Crosley Corporation covering the accused tuner involved in this case, you prepared and filed those applications, did you not?

A. Yes; I did.

Q. And, as I understand from you, none of those applications attempted to claim as an invention the feature of coaxiality of the pivot which has been mentioned in this case. And will you tell the court what you have done relative to obtaining the files on those applications for his [540] Honor's inspection?

Mr. Flam: Just a moment. I object to that question on the ground that it calls for the witness testifying regarding the contents of documents not in court.

(Testimony of Gibson Yungblut.)

Mr. L. S. Lyon: I mean a statement of the circumstance. I understood you objected to the witness testifying to that point and I am asking him to tell what he has done.

The Court: The court accepts counsel's statement they have attempted to get a copy and it is supposed to be on its way.

Mr. L. S. Lyon: And it will be here. I am surprised it is not here right now.

The Court: I don't know that it is material to the case at all. I can't see its materiality except, as I stated, naturally, it aroused curiosity in the court's mind but whether that curiosity is material to any of the issues in this case is very doubtful.

Mr. L. S. Lyon: We haven't anything to conceal from your Honor and we wanted your Honor to see just what the situation was.

The Court: Mr. Yungblut, have you any knowledge or information at all that indicates that any information was obtained from any of the patents or applications for patents of the plaintiff in this case upon which your automatic tuner was founded?

A. None whatever. [541]

Q. Have you any information that any member of your firm or any representative of the defendant in this case obtained any information from the files at Washington? A. No, they did not.

Q. Do you have any reason to believe that they did? A. No. In fact, I know they did not.

Q. As far as you know, their development was

(Testimony of Gibson Yungblut.)

independent entirely of any disclosures of the plaintiff?

A. Yes, that is correct.

Q. You were present when the discussion occurred with the plaintiff relative to claim 5, were you?

A. Yes.

Q. What is your recollection of that conversation? Is it about the same as the plaintiff testified to here?

A. Yes. I think, in general, the plaintiff has stated it quite fairly. We took the position that the claim was not infringed, giving, in general, the reasons that he gave.

Q. And what response did the plaintiff make to that?

A. Well, as the plaintiff pointed out, the conversation lasted about an hour. The plaintiff made no satisfactory response to that in the sense of answering the contention as I recall it. He did talk about the possibility of a disclaimer and at one part of the meeting or conversation, when I think Mr. E. S. Allen was present, he mentioned something about the dangers of qualifying disclaimers. But there [542] was no answer to the point that we made, so much so——

Q. What was the point that you made at that time in your discussion with him?

A. The point that we made may be summarized in this way, that the claim in its language refers clearly to a lever mechanism and could not refer to any such mechanism as is shown in the accused

(Testimony of Gibson Yungblut.)

device here. Our statement was, as I recall it, not having the language of the patent before me, that means movable about a pivot and acting—I am not quoting the language of the claim but as nearly as I recollect it—acting to contact an arm of the rocker and push it in one direction until the rocker is stopped by collision of the other arm of the rocker and the other contact toe of the cam or tappet, was language which related to the action of the device during tuning; that during tuning, so far as the tappet or cam is concerned, it is necessary that it be not movable about a pivot but fixed.

Q. At that time was the discussion centered primarily around claim 5? A. Yes.

Q. That was the only claim that it was claimed you people were infringing? A. Yes .

Q. Was there any discussion at that time relative to claim 5 being too general or too broad? [543]

A. Do you mean in the sense that it was anticipated by the prior art?

Q. Yes. A. As to being too broad?

Q. Yes. A. I don't recall that; no.

Q. Did you say there was some discussion of a disclaimer on claim 5 at that time?

A. Mr. Leishman, as I recall it, either mentioned disclaimers or said that he might endeavor to fix up the claim by a disclaimer.

Q. What was wrong with claim 5?

A. The thing that was wrong with claim 5 was that it didn't cover the Crosley device according to our contention.

(Testimony of Gibson Yungblut.)

Q. Well, did it cover any device?

A. Yes; it covered the device shown in the Leishman patent.

The Court: That is all.

Cross-Examination

By Mr. Flam:

Q. In considering Claim 5 of this patent, is there any statement there about a lever?

A. I am sorry but I didn't hear that.

Q. Is there any statement in there about a lever?

A. The word "lever" does not appear in the claim as [544] I recall it.

Q. You looked over all of the claims of the original patent, didn't you? A. Yes.

Q. At that time? A. Yes.

Q. There is no doubt in your mind that Claim 1 definitely refers to a lever, is there?

A. May I see the patent, if you please?

Q. Yes.

A. Does Claim 1, Mr. Flam, contain the word "lever"? Is that what you mean?

Q. Yes. A. Yes.

Q. That is an element of that claim, isn't it?

A. Yes.

Q. It also includes, as a separate element, a plurality of adjustable members pivoted to said lever, does it not? A. Yes.

Q. How did you construe that particular element?

(Testimony of Gibson Yungblut.)

A. Perhaps I don't understand your question but the particular words you have read I construed as calling for a lever, and then the claim goes on to state how it is mounted and the plurality of adjustable members I understood to [545] relate to the cams or tappets which are shown in Leishman's drawings and are marked 61 and 62.

Q. They are referred to in Claim 1, aren't they, as a plurality of adjustable members pivoted to such lever? A. Yes.

Q. Did you have any difficulty in construing that expression to mean the tappet? A. No.

Mr. Flam: That is all.

Mr. L. S. Lyon: I have no further questions, Mr. Yungblut. Except for this matter of the applications to arrive, we have no further evidence, your Honor.

Mr. Flam: We have nothing further.

The Court: How long do you gentlemen want to argue?

Mr. Flam: How long do you want to argue, Mr. Lyon?

Mr. L. S. Lyon: The three points your Honor suggested yesterday afternoon I am prepared to argue.

The Court: I am frank to say, gentlemen, that I am not interested very much in a discussion of the facts. They are all quite fresh in the court's mind and as far as the testimony in this case is concerned there has been practically no conflict. At least I can't determine any serious conflict be-

tween the testimony of the witnesses on either side. It is going to be a problem for the court to try to get the law and the facts together in a way that it can work [546] out maybe a just judgment. I am interested in having your records complete in this case so that any decision that I may render may be fairly placed before the Circuit Court of Appeals, so that, if I am in error, such injustice may be corrected. I have very definite conclusions relative to the facts in this case. I don't know whether I can gain more by submitting the matter on briefs and having you discuss it at length or whether I can come nearer rendering a judgment in accordance with the thoughts I have in mind at this time. This case has been my sole source of study for a week now and I have tried to read and study the cases. As far as I know, there is no conflict in the court's mind as to any point of law. At least, I can't discover any except the one point that I raised yesterday and the point that you mentioned in your pretrial brief. So I am going to ask to hear from the parties at 2 o'clock. And I will be glad to hear any points that either one of the parties may desire to make. I want everybody to have their full say in the matter, as I do not wish anybody to feel that they have been shut out. Are those the lost exhibits that just came in?

Mr. Yungblut: These are the lost exhibits, if your Honor please.

The Court: Do you wish to introduce them?

Mr. L. S. Lyon: Yes, your Honor. We can

open them up first and see if they are what we ordered.

The Court: I would suggest in this regard that they [547] be made available to counsel for the plaintiff and perhaps there can be a stipulation, after examination, as to the general contents of those applications. The court is primarily interested in ascertaining whether or not the defendant is claiming a patent on any of the matters covered by the plaintiff's patent. And, if counsel for the plaintiff may examine those applications, perhaps with Mr. Lyon's help and an understanding of the English language, you probably will be able to apprehend and determine their meaning.

Mr. Flam: I am afraid, your Honor, I can't do it between now and 2 o'clock, with all of those file wrappers.

The Court: How many applications are involved?

Mr. Yungblut: I think there is the one which has already been introduced, a divisional case of that or a case of which that is a divisional part, I forget which, and one other case on an analogous or related structure; which I don't believe is really pertinent here.

Mr. Flam: May I inquire whether these are all of the applications that relate to mechanical push-button tuning that are now owned by the Crosley Radio Corporation?

Mr. Yungblut: No; they are not.

Mr. L. S. Lyon: They are all the cases that involve the accused tuner, are they?

Mr. Yungblut: They are the only cases that involve the accused tuner.

Mr. Flam: How many of them did you say there are? [548]

Mr. Yungblut: I haven't looked over these but I told the office to send everything there was. But what I just stated I think is correct.

Mr. L. S. Lyon: In other words, the main patent is already here and you have a certified copy of it. Do you think there is only one other?

Mr. Yungblut: There is a division of that.

Mr. L. S. Lyon: And one more?

Mr. Yungblut: And one more. [549]

Mr. Flam: While we are on that subject, there is one other deposition that I should like to offer. That is the deposition of Lewis Crosley in the same proceeding. However, I would like to call your Honor's attention to the fact that that witness be construed as an adverse witness under Rule 43(b) of the Rules of Civil Procedure. I wouldn't like to be bound absolutely by what he says. He was one of the officers of the Crosley Corporation. There are some aspects of his testimony that we would like to use. If I may offer it with the understanding that he is an adverse witness.

Mr. Lyon, Sr.: If your Honor please, I object to that. Crosley is not an adverse witness. He is not in any way connected with the plaintiff in this case.

The Court: What was the form in which the deposition was offered previously in the other case?

Mr. Flam: The depositions were taken in Cincinnati by the then defendant, or, rather, on behalf of the defendant, and under the authority of the Crosley Radio Corporation.

The Court: There was no reservation made there as to the manner in which it was to be considered by the court in that case?

Mr. Flam: Of course, in that case the testimony was offered on behalf of the defendant, the Crosley Corporation and the Associated Wholesale Electric. In this case, of course, they are not a party. But Yungblut and Kilgour are [550] members of the same organization; Yungblut was the attorney representing Crosley, and Kilgour, I believe was identified as one of the chief engineers in connection with the radio department, and they were all adverse witnesses to us.

I wanted to round out this testimony and have Lewis Crosley's testimony accepted with that understanding, that it is the testimony of an adverse witness.

The Court: Well, I don't know as the court should restrict the reception of the deposition, but you could argue in your briefs the portions of it that either of you feel you should or should not be bound by. You can argue that in your briefs. The reception of it at this time should be without restriction, subject to the right of the litigants to discuss in their briefs the effect the court should give it in the evidence.

With that understanding it will be received.

Mr. Flam: With that understanding I will offer in evidence the testimony of Lewis Crosley as it appears on pages 326 to 335 of the record in the Associated Wholesale Electric case.

(The matter referred to to be copied into the record appearing on pages 326 to 335, inclusive, of the record in the case of LeRoy J. Leishman v. Associated Wholesale Electric Company, appears in the following words and figures, to wit:) [551]

LEWIS M. CROSLLEY

a witness called on behalf of the Defendant, being by me first duly cautioned and sworn, deposes and says, in answers to questions propounded to him by Marston Allen, Esq., of counsel for Defendant, as follows, to wit:

Direct Examination

By Mr. Allen

Q. Please state your full name, and age?

A. Lewis M. Crosley; 51.

Q. And your residence?

A. 5764 Belmont Avenue, Cincinnati, Ohio.

Q. With what company are you connected and in what capacity?

A. Connected with The Crosley Corporation, as Executive Vice-President.

Q. As such, are you familiar with the products manufactured and sold by The Crosley Corporation?

A. Yes.

(Deposition of Lewis M. Crosley.)

Q. Will you give us a brief history of the work that was done by the Corporation in connection with tuning devices for radio receivers not using the conventional rotary dial tuning? Give dates to the extent that you can.

A. In the year 1937 our engineers developed and used a motor driven method of tuning the variable condenser in some models of radio receivers in our lines. [552]

Q. And how did this work?

A. This worked by driving the condenser with a motor, which started and stopped by push button control. The motor would move the condenser from its former position and carry it slowly to the new desired position of the condenser, which was determined by the button you pushed.

Q. Now, what part of 1937 was that, if you can recall?

A. That was in the early part of 1937.

Q. Were you satisfied with that mode of tuning?

A. We were not entirely satisfied with that method of tuning, because of the fact that we found it to be costly and slow in operation, so our engineers in charge of the work of development hit upon the idea of a push button mechanism which was direct and positive, entirely manual in control, not requiring the use of an electric motor.

Q. Had you known of the manual button tuning previous to the experience of which you speak?

A. We knew of a method used by Zenith over a period of years which we called the cash register

(Deposition of Lewis M. Crosley.)

type of tuning, which had been on the market for some time but was not particularly popular as a sales feature.

Q. When you say "cash register tuning," what do you mean by that?

A. I mean a tuning device which was largely made up [553] of levers, in which, instead of pushing directly in, as our type was developed, they pushed down in a cumbersome sort of method.

Q. Now, you say that your device which was worked up, pushed directly in?

A. Our device that our engineers developed was small and compact and worked on the principle that the buttons were pushed straight in and not downward.

Q. Now, do you have any recollection of a visit of LeRoy J. Leishman to The Crosley Corporation in the fall of 1937? A. No.

Q. Did your company come out with a push button, push rod type of tuning device? A. Yes.

Q. I show you a tuning device on one of your models 718-C, and ask you if this is the tuning device to which you refer? A. Yes.

Q. When did you first ship radio receivers with those tuners in them?

A. We commenced shipping radio receivers with this type of tuning in January, 1938.

Q. In what receiver?

A. In a low priced automobile set model. [554]

Q. How many models did you incorporate this tuning device in at that time, and why?

(Deposition of Lewis M. Crosley.)

A. We incorporated this tuning device in one model receiver at that time.

Q. And why only in one model?

A. We were at that time developing and preparing for the market a low priced automobile set to sell at the attractive price of \$19.98 retail, and we found it possible to use this device to make the set more acceptable and at the same time test the marketability of this particular method of tuning.

Q. Did you consider that you had anything exclusive in that tuning device for your company's products? A. Yes.

Q. What was it?

A. We felt that we had overcome the objection to the types of tuning previously used, both manual and electrical, because of the use of a direct push rod acting to rotate the condenser.

Q. While you were going through this test period, did you receive, or was there brought to your attention a letter from LeRoy J. Leishman to your company? A. Yes.

Q. Do you have a copy of the letter before you?

A. Yes, I have a copy of the letter before me.

Q. Attached to that letter is a photostat of part of a patent. Was that received with the letter?

A. Yes.

Mr. Allen: I have pinned the photostat to the letter so that it will not become lost. I offer the letter with the photostat attached in evidence as Defendant's Exhibits 7 and 7-A respectively.

(Deposition of Lewis M. Crosley.)

Q. Was there anything else included in the way of a document with Exhibits 7 and 7-A?

A. Yes, there was a copy of a license agreement with the letter and a page of a patent listed as Exhibits 7 and 7-A.

Q. As a matter of fact, Mr. Crosley, there were two copies of the agreement, is that not correct?

A. Yes, I believe there were.

Mr. Allen: I will offer the one copy to which the witness referred, in evidence as Defendant's Exhibit 7-B.

Q. What did you do upon receipt of this letter and other documents?

A. I consulted with our engineers and our patent attorneys, because I was very much surprised and worried to find that there was any question concerning the new tuning mechanism which our engineers had developed.

Q. Did you reply to Mr. Leishman?

A. Yes, I replied to Mr. Leishman on February 25, 1938.

Q. Do you have a carbon copy of your letter to him [556] at that time?

A. Yes. (Produces same.)

Mr. Allen: I ask that the carbon copy of the letter to which the witness referred, be received in evidence as Defendant's Exhibit No. 8.

Q. Did you receive, then, a response from Mr. Leishman, and if so, do you have it with you?

A. Yes. In March, I received a letter dated the

(Deposition of Lewis M. Crosley.)

9th from Mr. Leishman, in which he enclosed a copy of the patent 2108538.

Q. Do you have the letter and the patent that was attached? A. Yes. (Produces same.)

Q. The date stamp on the patent shows March 11, 1938. Does that identify this patent to you as having been the one that came with this letter?

A. Yes. It is customary for our mail desk to stamp documents when received.

By Mr. Allen: I ask to be received in evidence the letter to which the witness has just referred, as Defendant's Exhibit No. 9, and the copy of the patent as Defendant's Exhibit No. 10.

Q. Now, by the time you received a copy of this letter and the patent to which you have just referred, had you consulted with your engineers and attorneys with reference to [557] the applicability of the Leishman claim to your tuning devices?

A. Yes.

Q. And did you communicate with Mr. Leishman on the 11th day of March with reference to this claim?

A. Yes, I wrote Mr. Leishman on March 11, 1938, and told him that we found that we could not employ the use of a lever in our device, that "We are using a straight push-button type, which we do not believe comes under your patent."

Q. State whether or not you wrote that upon advice of your counsel and your engineers and experts. A. Yes.

(Deposition of Lewis M. Crosley.)

Mr. Allen: I ask to be received in evidence a carbon copy of the letter last referred to, as Defendant's Exhibit No. 11.

Q. With regard to reports of your engineers state whether you have in your files a copy of any correspondence which epitomizes the reports to you.

A. We have a copy of a letter written March 14, 1938, to our patent attorneys, Allen and Allen, signed by Mr. H. J. Tyzzer, Chief of the Household Radio Division of The Crosley Corporation.

Q. State whether or not that sets forth what Mr. Tyzzer reported to you. [558]

A. This letter explains the report that Mr. Tyzzer gave me concerning Mr. Leishman's letter and patent. I instructed Mr. Tyzzer to write accordingly to our attorneys, Allen & Allen.

Mr. Allen: I ask to be received in evidence the carbon copy of the letter referred to, as Defendant's Exhibit No. 12.

Q. I hand you a sheaf of correspondence and telegrams, containing a letter from Mr. Leishman of March 12, 1938; a second letter to you from Mr. Leishman dated March 17, 1938; a letter from you to Mr. Leishman dated March 21, 1938, and telegrams dated March 27 and 28, 1938, and ask you if you can identify this sheaf of correspondence?

A. Yes, I can identify the sheaf of correspondence.

Q. From whose files did it come?

A. It came from my files.

(Deposition of Lewis M. Crosley.)

Q. Do you recall the sending and receiving of that correspondence? A. Yes.

Mr. Allen: I ask that the correspondence and telegrams be received in evidence as Defendant's Exhibits 13-A to 13-E, inclusive.

Q. Now, Mr. Crosley, after you had written the letter of March 11 to Mr. Leishman, to which you have referred, what did you do with regard to the use of the [559] accused tuning device in the receivers of your company?

A. About that time our field tests made by the sale of a low priced automobile receiver indicated that our new tuning device was acceptable as a sales feature, and by this time we felt free to incorporate this method of tuning from a patent point of view in other models of receivers being developed for the coming year's line.

Q. And did you in fact incorporate that tuning device in various models? A. Yes.

Q. What do you mean by "from a patent point of view" in your last answer?

A. Up to this time, the only patent that had been brought up against us was this one of Mr. Leishman's and in view of the fact that we did not feel that we infringed this patent, we felt free to use this device in other models.

Q. Did Mr. Leishman come down to Cincinnati for a conference, if you recall, after this last correspondence that we put in evidence, Exhibits 13-A to 13-E?

(Deposition of Lewis M. Crosley.)

A. I was told that he came to Cincinnati, but I had no contact with him.

Q. What is the next letter that you received with regard to this Leishman patent, in behalf of Mr. Leishman?

A. In August we received a letter from Mr. Leishman's [560] attorney, Mr. John Flam, advising us that his patent had been reissued.

Q. Do you have that letter with you here?

A. Yes, this is the letter which we received registered mail, advising us of the reissue of the patent.

Mr. Allen: I ask that the letter to which the witness has just referred, be received in evidence as Defendant's Exhibit No. 14.

Q. State whether or not you had heard previous to that time that a reissue patent had been allowed to Leishman.

A. I was told shortly before that time something about a reissue patent.

Q. How far had you gone with your receiving set designs for the ensuing season by the time you received word that Leishman had a reissue patent?

A. Our full line of receiving sets was in production, and quantities of them had already been shipped to the field.

Q. What about changing your designs at that late day for the ensuing season?

A. It would have been impossible to have changed our designs at that time.

Q. Had you ever received any word from anyone

(Deposition of Lewis M. Crosley.)

that Leishman was filing an application for a reissue patent previous to being told that a reissue patent had been [561] granted to him? A. No.

Mr. Allen: Direct Examination closed.

No cross examination.

And further, deponent saith not.

LEWIS M. CROSLEY.

Mr. Flam: That deposition refers to documentary exhibits in this Volume III.

The Court: Volume III of the record in the Court of Appeals?

Mr. Flam: Yes, in the Associated Wholesale Electric case.

On page 663 of the record, "Defendant's Cincinnati Exhibit No. 7B" is the title for it, which was referred to in the Crosley deposition, and it continues to and including page 668.

And then immediately following page 669, "Defendant's Cincinnati Exhibit No. 8.

I offer those in connection with the deposition of Lewis Crosley.

(The matter referred to to be copied into the record appearing on pages 663 to 669, inclusive, of the record in the case of LeRoy J. Leishman v. Associated Wholesale Electric Company, appears in the following words and figures, to wit:)

Defendant's Cincinnati Exhibit No. 7B

License Agreement

Whereas, LeRoy J. Leishman, of Los Angeles, California, hereinafter called the Licensor, is the sole owner of Letters Patent No. 2,084,851, 2,108,538, and D-108574 and of a series of patent applications pertaining to lever and/or push-button operated tuning devices and tuning scales; and

Whereas, Crosley Radio Corporation, a corporation of the State of _____, hereinafter called the Licensee, is desirous of manufacturing and/or selling apparatus embodying the inventions described in said Letters Patent and/or patent applications.

Now, therefore, in consideration of the sum of One Dollar (\$1.00) and other valuable considerations in hand paid by the Licensee to the Licensor, the receipt of which is hereby acknowledged by the Licensor, and in further consideration of the mutual agreements herein contained, the parties hereto agree as follows, to wit:

First: Subject to the conditions herein contained, the Licensor hereby grants to the Licensee a non-exclusive license to manufacture or assemble tuning units embodying said inventions in its own plants for installation in radio, and/or television sets manufactured by the Licensee, and to embody in said sets any of the designs covered by said patent or applications and to sell the sets in which such [564] units are installed, or in which said designs are embodied, throughout the United States and the ter-

ritories thereof until the expiration of the last Letters Patent on said inventions or on any improvements thereon made or acquired by the Licensor. It is understood, however, that no license is hereby granted to the Licensee to sell tuning devices embodying said inventions disassociated from receivers.

Second: Between the first and thirtieth days of each and every January, April, July and October, during the life of this Agreement, the Licensee shall make full, true and correct reports in writing to the Licensor, and such reports shall state the total quantity of each type of radio and/or television set and/or other device made under this license during the period for which such report is made, each type designated by the manufacturer's model number, and if a mechanical or electrical tuning device, the type shall also be designated by the number of operating levers, buttons or other individual station selecting members thereon. Each such report shall cover all receivers or other devices made under this license during the preceding three months, excepting the first report, which shall cover all such receivers or devices made prior to the date of such report. Each report shall be verified under oath of the person in charge of the books of the Licensee.

Third: Each report made in accordance with paragraph "Second" hereof shall be accomplished by a royalty payment to [565] the Licensor of one and one-half cents (1½c) per lever, button or other member that may be adjusted so that its subsequent

operation will tune in a pre-determined station, for each set shown by such report to have been made by the Licensee during the period for which such report is made; but if such units are constructed so that they may be used for simultaneously turning radio and television tuning shafts to any angular position, irrespective of the angular position of the other shaft, or if the tuner is motor driven, the royalty rate shall be double the rate hereinabove set forth.

On receivers on which royalties are payable according to the above schedule, no additional royalties shall be required because of the inclusion in said receivers or devices of any tuning scale and/or design invention covered by any of said patents or applications; but on receivers on which royalties are not payable according to the above schedule, the royalty payment accompanying said report shall be two and one-half ($2\frac{1}{2}c$) cents for each dial or tuning scale covered by any of said applications or patent resulting therefrom, and two ($2c$) cents per set or separate escutcheon embodying a design invention covered by any of said applications or patent resulting therefrom.

Fourth: When devices embodying the inventions under which this license is granted, are purchased by the Licensee from a concern licensed to make such devices for resale, [566] it is understood that no royalties are payable by the Licensee under this License on sets or receivers or other devices in which such licensed devices are installed.

Fifth: Should the royalty payments under paragraph "Third" for any calendar year be less than Six Hundred Dollars (\$600.00), the Licensee shall pay to the Licensor an amount sufficient to make the total amount paid for such calendar year the sum of Six Hundred Dollars (\$600.00); and in the event of failure to make such minimum payment, this contract will terminate sixty (60) days following the end of the calendar year for which such payment was due.

Sixth: The Licensee shall keep full, true, and correct books of account in which shall be entered all transactions conducted under the license hereby granted, and said books and all other records of the Licensee pertaining to operations under this license shall at all times during business hours be open to the inspection of any certified public accountant duly authorized by the Licensor to examine such books and records for the purpose of verifying reports by the Licensee and ascertaining whether all royalties due to the Licensor have been paid.

Seventh: The Licensee shall mark all devices manufactured and/or sold hereunder and all advertisements for said devices with a legal notice of the patent and application under which this license is granted, which notice of the [567] patent and application shall consist of the words, "Licensed under Leishman Patents No. 2,084,851 and 2,108,538 and Leishman patents pending."

Eighth: If the Licensor shall make any improvements involving the use of the inventions licensed

hereunder, or shall acquire any United States Letters Patent covering such improvements or the right to grant licenses under such patents, all such improvements and patents shall be included in the license hereby granted, and no additional royalties with respect thereto shall be required unless it is with respect to a patent or licensing right acquired from a third party at the request of another licensee that agrees to pay additional royalties with respect thereto, in which case the licensee shall have the option to embody the same invention in its products at the same additional royalty rate as that paid by said other Licensee.

Ninth: Should any subsequent licensing agreement on said inventions between the Licensor and a radio and/or television set manufacturer contain a royalty arrangement that the Licensee prefers to the terms of this agreement, the Licensor agrees, at the request of the Licensee, to amend this agreement to include the same provision or arrangement.

Tenth: If the Licensee in any way violates the provisions of this Agreement, the Licensor may at his option terminate this license. Termination of the license under [568] this paragraph may be made by service on the Licensee, either personally or by registered mail, of a notice specifying as the date of such termination a date at least thirty (30) days following the date upon which the notice is served and specifying in detail the particulars in which the Licensee is in default, or has violated the provisions hereof. If the particulars so speci-

fied constitute anything other than a wilful violation of the terms hereof on the part of the Licensee and if the Licensee makes good its default and notifies the Licensors within the period of thirty (30) days following the service of such notice that it has done so, the license shall continue in full force and effect.

It shall be the duty of the Licensee upon making good its default as provided above to apprise the Licensors before the expiration of said period of thirty (30) days of the acts relied upon by it as remedying the particulars in which it has been in default, or in which it has violated the terms of this Agreement, and in the absence of such appraisal his license will terminate on the date specified in the notice.

Eleventh: All notices, statements, requests, demands or communications required to be given, or which any party hereto may desire to give hereunder, shall be in writing, duly signed by or on behalf of the respective party giving the same, and shall be sufficiently served or given if delivered by messenger or sent by United States Registered Mail, postage prepaid, addressed to the party to whom the same should be given at the following address, or such other address as either party hereto may from time to time furnish to the other for such purpose.

LeRoy J. Leishman, 341-343 No. La Brea Avenue,
Los Angeles, California;

Crosley Radio Corporation, 1329 Arlington, Cincinnati, Ohio.

Twelfth: No termination of the license herein conferred shall relieve the Licensee of any previously accrued obligation as outlined herein.

Dated this day of, A.D. 1938.

.....,
Licensor.

Witness:

CROSLEY RADIO
CORPORATION,
Licensee.

By

Witness:

[Endorsed]: Filed Mar. 11, 1940. .

R. S. ZIMMERMAN,
Clerk.

Defendant's Cincinnati Exhibit No. 8

February 25, 1938

Mr. L. J. Leishman,
Stevens Hotel,
Chicago, Illinois. [570]

Dear Sir:

Your letter of February 22, together with copies of contracts, addressed to Mr. Powel Crosley, has been turned over to me.

We can tell nothing from the photostatic copy of the one sheet of the patent, which you attached to your letter.

We have ordered a copy of this complete patent,

and will advise you further when we have had time to study it.

Very truly yours,

THE CROSLEY RADIO
CORPORATION,

LEWIS M. CROSLEY,
Executive Vice President.

LMC:EB

[Endorsed]: Filed Mar. 11, 1940.

R. S. ZIMMERMAN,
Clerk.

By C. E. HOLLISTER,
Deputy Clerk. [571]

Mr. Lyon, Sr.: We offer in evidence and ask it be deemed read and copied into the record in this case, the testimony of Leslie K. Loehr, taken before Judge Harrison in the Associated case as it appears in the printed transcript of the record in that case, page 231 to page 281.

We have no stipulation as to the admissibility of Mr. Loehr's testimony. As I understand it, Mr. Flam doesn't make any point of incorporating it here in the physical manner that we have indicated, but his point is as to his competency.

Ordinarily, as I understand it, the testimony taken in another cause of action where the parties are different is not admissible in a subsequent action, but we feel that this is an exception, it comes under an exception to that rule, because this was

a witness that was produced by Mr Leishman in that case and testified as a witness for Mr. Leishman, not for his opponent in that case, and as I understand the exception that I contend renders this evidence admissible, if a party has tendered a witness and used his testimony, that is, an adoption of his testimony, it is considered in the nature of an admission as to his testimony, and renders the testimony admissible against the party who produced it and offered it, in subsequent litigation against other parties.

This academic point of evidence is considered in a [572] leading British case, *British Thomson-Houston Co. v. British Insulated & H. Cables*, 1923, 1 Chancery, 203; and the same case on appeal, 2 Chancery, 260.

There is a dissenting opinion of the justices in that case, and this proposition is discussed.

The most definite case in this country recognizing and approving this exception to the general rule is the decision in *Becker v. Philadelphia*, 217 Penn. 344; 66 Atlantic, 564. In that case, your Honor, the testimony of a physician who had been called by a party in an earlier suit against a third party was admitted for the purpose of contradicting the testimony of the same party in a later suit on the ground that having produced that physician and having used his testimony and contended for his testimony in the earlier case, that that was an adoption of his testimony and the testimony comes in having been used by the party and is ad-

missible in the later case in the nature of an admission by him.

The reason I would like Mr. Loehr's testimony is Mr. Loehr was produced as a witness in the Associated case by Mr. Leishman, he was the chief designer at Lockheed; he was examined as to whether or not this principle of coaxiality was a mere matter of well-known mechanical engineering and within the skill of an ordinary mechanic, and his testimony is quoted at length in Judge Harrison's opinion and was relied [573] upon by Judge Harrison. So I am submitting to the court the proposition that I believe it may be admitted here, over Mr. Leishman's objection, on the ground that he having produced it and offered it, it could be used against him in this case.

Mr. Flam: Your Honor, I don't know of any exception, I have studied the law regarding the admissibility of testimony taken in prior cases, and as Mr. Lyon said, the testimony of a witness taken in a case between other parties is not ordinarily admissible. It may be admissible if the testimony can be construed as an admission on the part of the person producing that witness. But I don't think there is enough foundation laid here to show that, and there should be no exception on that ground.

Witnesses in one litigation should not have the force and effect of offering the same testimony in other litigation, unless there are some special circumstances making it admissible as admissions against the party in interest.

The Court: I thought I remembered in Judge Harrison's opinion in this case of Leishman against the Associated Wholesale Electric Company some reference to that name.

Mr. Flam: Yes, your Honor.

The Court: I see it here.

Mr. Flam: As far as the Loehr testimony is concerned, I think all that is pertinent to the decision is reproduced in [574] the opinion itself.

The Court: There does seem to be an excerpt in the opinion appearing in 36 Fed. Supp. at 808, in which Judge Harrison states, "The plaintiff's expert Leslie K. Loehr testified as follows:"

I can see how if the court should reach the stage of this case in considering it as to what if any variance there is in the record before this court and that which was before Judge Harrison in another division of this court, that it might be proper for the court to consider such evidence. I don't know what the situation would be. I can't anticipate it. After a study of this case, after proper briefs, the court might come to the conclusion that entirely independent of the other case this case warrants the consideration of this division of the court. On the other hand, it might be that the court would conclude, after a thorough study, that the case was the same as that was submitted to Judge Harrison, and of course a different view would be taken, as I told you at the beginning. I have never been in sympathy with the idea that in coordinate courts, multiple courts of coordinate jurisdiction, that litigants should pick one judge or another

judge. It is the decision of the court. Unless there is some reason other than the mere desire of a litigant to have some particular judge pass on a case, there doesn't appear to be any good reason why that should be done in a [575] multiple court.

I think we can receive this subject to a discussion of it in the briefs.

(The matter referred to to be copied into the record appearing on pages 231 to page 281, inclusive, of the record in the case of LeRoy J. Leishman v. Associated Wholesale Electric Company, appears in the following words and figures, to wit:)

LESLIE K. LOEHR

called as a witness on behalf of plaintiff, being first duly sworn, was examined and testified as follows:

The Clerk: Will you state your name?

A. My name is Leslie K. Loehr.

Direct Examination

By Mr. Flam:

Q. What is your present occupation, Mr. Loehr?

A. I am a machine designer.

Q. Will you state in general what your past experience has been in connection with design of machinery or analogous materials?

A. Well, in addition to eight grades of school and high school I have had three years' schooling

(Testimony of Leslie K. Loehr.)

in engineering subjects, mechanical engineering subjects, at the University of Washington. I have had three years' apprenticeship in [576] machinery building and tool and die design; and the past 15 years I have been actively engaged in the development of inventions and patents and machines and tools and dies.

Q. Where are you at present employed, Mr. Loehr?

A. I am employed as methods and production engineer at the Lockheed Aircraft Corporation, Burbank, California.

Q. I forgot to ask you where you resided. Will you state that, please?

A. Oh, I live in Los Angeles at 6109 Saturn Street.

Q. Have you studied the patent in suit here, reissue No. 20,827?

A. Yes; I have studied this patent.

Q. You understand what it discloses?

A. Yes.

Q. I show you this radio set chassis which has been furnished to me by opposing counsel some months ago in connection with answers to interrogatories, and which I shall ask the clerk to mark for identification.

The Clerk: Exhibit 22 for identification.

Q. (By Mr. Flam): Have you studied that set especially with regard to the push button tuner?

A. With regard to the tuner; yes.

(Testimony of Leslie K. Loehr.)

The Court: Has the red tag any significance?

Mr. Flam: I think it is more in the nature of some instructions on how to install the set than anything else. [577] I don't think it is dangerous.

Q. Is that tuning mechanism in that Crosley set similar in structure to that exemplified by Plaintiff's Exhibit 10?

A. I would say that the push button mechanism is substantially the same.

Q. Using either of those two exhibits, Exhibit 10 or Exhibit 22 for identification, will you explain to the court the process of adjusting, or, rather, the structure of the Crosley push button mechanism, having in mind, of course, that we know something about it already, but particularly the manner in which the set is made?

A. He is pretty analytical, his Honor is, I think. Outside of the adjustment—maybe I can explain that to you and the necessity of loosening the screw which tightens the tappet.

The Court: That releases the tappet so you can set it?

A. That is right; so you can adjust the dial.

Q. For instance, if you want it over at 1500 you set it there and you tighten up your screw?

A. That is right; you tighten up your screw. It is done by throwing this out.

Q. And you throw it into 1500?

A. That is right; and it brings it back.

Q. (By Mr. Flam): Have you made any com-

(Testimony of Leslie K. Loehr.)

parison of the Crosley mechanism illustrated by those two exhibits, 10 and 22, with the mechanism illustrated in the Leishman patent in [578] suit? I want to have you use the chart in that connection (placing chart on easel). Is that all right for you, Mr. Loehr?

A. Well, yes. It might be necessary to——

Q. I will give you the pointer here. Did you make such a comparison of the Crosley tuning mechanism?

A. Yes; I have made such a comparison.

Q. Will you explain the similarities of the two mechanisms by the aid of the chart?

A. The chart is quite self-explanatory, but perhaps for the benefit of the court. On the right over here we find the——

The Court: I recognize——

A. ——all those elements.

Q. I recognize the plaintiff's five figures there of his patent.

A. The rocker and the tappet.

The Court: In Plaintiff's Exhibit 7. I recognize those.

A. Do you recognize these as of the——

Q. (By Mr. Flam): By "these" you mean which Figs.?

The Court: Referring to Figure C-1.

A. The tappet C-61 and the treadle bar of the rocker C-48.

The Court: Yes; I recognize them. [579]

(Testimony of Leslie K. Loehr.)

A. And the opening in the treadle bar for that portion of the tappet which must project into the treadle bar. Here is that white portion that represents the opening.

The Court: Yes; I see what you are referring to.

Q. (By Mr. Flam): Will you refer to Fig. C-5 for that?

The Court: Fig C-5 represents the——

A. Coaxial.

Q. ——the opening that you are referring to here as the coaxial movement?

A. That is right.

Q. To permit the coaxial movement?

A. That is right; that is correct.

Mr. Flam: Well, go ahead. I won't interrupt you. Use your own method of exposition.

A. Well, it is more or less obvious from the chart that the main object of the lever is to impart linear displacement to the tappet and movement down of that tappet in contact with the rotor as shown in Fig. L-2 will rotate the rotor to the angular position of the tappet as shown——

The Court: In other words, the lever is the means by which you bring the tappet in contact with the rocker to bring it into position?

A. That is right.

Q. I can understand that.

A. And over on this side the plunger is used for [580] imparting linear motion.

(Testimony of Leslie K. Loehr.)

Q. For the same purpose as in the other case?

A. That is right. One is a substitution for the other.

Q. But they do differ; one uses a plunger and the other uses a lever?

A. That is the only difference. The difference is that the necessity for imparting linear motion to the tappet, of course, is essential.

Q. The similarity of the two is the fact that both use a rocker——

A. Both use a tappet.

Q. And both use a rocker?

A. And both use a rocker, and both use means for imparting linear motion.

Q. There would have to be a means, wouldn't there——

A. That is right.

Q. There would have to be a means used to impart motion? A. That is right.

Q. So the similarity is, is it, that they both use tappets and they both use rockers?

A. That is right.

Q. It is that method, you might say, of a combination of a tappet and a rocker—— [581]

A. That is correct.

Q. ——that connects up both of these tuners?

A. That is correct.

Q. (By Mr. Flam): And what about the relationship between the tappet and the rocker in the fully tuned in position?

(Testimony of Leslie K. Loehr.)

A. In both cases—I think your Honor can see that—the axes——

The Court: It is coaxial?

A. Coaxial, that is right.

Q. (By Mr. Flam): Do you have anything to say regarding the——

The Court: Is there any difference between coaxial and concentric?

A. Well, it depends upon what you are referring to, I mean when those terms are used. Concentric would mean that same shape about the center.

Q. I know, but when she is brought into place they are not using the axis, are they; they are simply in position?

A. They are in position, excepting their adjustment. Then the axis, of course, must be used.

The Court: And the axis is used for the purpose of adjustment?

A. That is right. [582]

Q. And then it is brought into a definite position, you might say, at rest, a definite position at rest? A. By aid of the cam maybe.

Q. Yes; at whatever angle the rocker may be set?

A. That is right.

Q. (By Mr. Flam): Is that illustrated on the diagram, Mr. Loehr?

A. Yes. There are two positions of the cam, or, rather, of the rocker.

Q. Reference character?

(Testimony of Leslie K. Loehr.)

A. Reference character 48 in Figure L. The rocker is tilted this way.

Q. L-2, you mean?

A. No; this is L-1, and this is the rocker for that: It is set sloping and the—well, let us say, sloping up to the right; whereas, in Figure L-3 it is sloping up at the left or to the left and the tappet happens to be adjusted in Figures L-1 and L-3 at approximately the same angle, and yet when the movement downward to the tappet is given and it finally comes to rest it moves the treadle to exactly the same position in each case.

The Court: May I ask, in mechanical work, the fact of coaxial, is there anything unusual about that in [283] your profession or specialty?

A. Well, to use the term "coaxial" loosely, no. I mean, many things are coaxial. I mean, for instance, you have a series of gears on a shaft, all of those gears are, of course, coaxial inasmuch as they all operate about the same center.

Q. The same result could be attained here by the use of a gear, couldn't it?

A. Well, I don't know just what you mean by using a gear here to accomplish this result that we have here by bringing this member coaxial with this member, or tappet 61 to 48—

Q. From a mechanical point of view, you are working at now, you said—what was your present position with the Lockheed?

A. Production and methods engineer for Lockheed.

(Testimony of Leslie K. Loehr.)

Q. And you are studying these matters all the time, aren't you?

A. Yes; we are continuing to study the machines and inventing new machines.

Q. Trying to?

A. Well, we succeed occasionally.

Q. Sometimes they drop?

A. What do you mean, the machines?

Q. After they succeed; yes. [584]

A. Oh, yes, yes.

Q. But the fact that a combination of parts are placed together in a coaxial position, is there anything unusual in that?

A. Not to use the term loosely; no.

Q. How, then——

A. Well, I mean by that, that as far as—well, there are many mechanical elements that are placed coaxial. For instance, this shaft is coaxial with this other shaft when it happens to be down on the same plane. You see what I mean? But now, where we introduce parts that may interfere bodily one with the other it is—well, people just don't do it because you have got to provide for the space for the parts to go in to become coaxial.

Mr. Flam: May I interpose a question that I think his Honor will be interested in?

Q. What is the importance of having this, what is the advantage of having it coaxial, the rocker and the tappet? In what way does it operate in a different manner than what you would ordinarily expect coaxial or other elements to operate?

(Testimony of Leslie K. Loehr.)

A. Well, the advantage is in the adjustment.

Q. Can you illustrate the adjustment by any model that you have?

The Court: Oh, I understand. [585]

Q. You mean the adjustment of placing it at a different angle?

A. Yes. Well, if it is not coaxial it makes quite a difference.

Q. Let us see. Calling your attention to Plaintiff's Exhibit 20 is that coaxial?

A. Yes; that is coaxial. The tappet is coaxial. It is operating about a phantom center; in other words, it is moving in a path to a center that coincides with the axis of the——

Q. Just what do I understand you mean by "coaxial"? I may be placing too narrow an interpretation upon it in my own mind.

A. Well, the term "coaxial" in this particular case applies to the imposition, let us say, of another part, or which cooperates with another part, so that the two may be moved or rotated about a common axis without any linear displacement of the means for holding the tappet in contact with the rotor or treadle bar or rocker, as it is called.

Q. This one, referring to Exhibit 20, does not protrude through or into the rocker at all, does it?

A. That is right.

Q. It works on the outside edges completely?

A. That is right.

Q. The advantage of the chart, or of Exhibit

(Testimony of Leslie K. Loehr.)

7, is in [586] the fact that it does protrude into the rocker, is it not?

A. That happens to be one mechanical embodiment of that feature so that the axis there physically and visually do coincide. In this particular case physically they do but visually they don't.

Q. The result is the same? A. Yes.

Q. But actually they do not?

A. Visually they don't. I mean by that—you can't see the axis of that.

Q. Yes; I understand that much. But, as I understand it, the coaxial movement—would you call it?

A. Well, the coaxial movement, yes, of the relative parts when they are in contact.

Q. Using it loosely, as I believe you used the expression, it is a more or less common mechanical term in use?

A. I don't know whether I get exactly what you mean.

Q. Here is what I am trying to find out. Is there anything new about the fact this is coaxial? Is there anything new to the mechanical art that anything is coaxial?

A. No; that is true, that there is nothing new in the mechanical art that things are made coaxial because, as I cited, there are plenty of gears on a shaft or pulleys on a shaft and all of those pulleys and gears are coaxial.

The Court: You may proceed. [587]

Q. (By Mr. Flam): I think you answered that

(Testimony of Leslie K. Loehr.)

there is some importance in connection with the setting of the mechanism illustrated by Plaintiff's Exhibit No. 7—

The Court: Do you mean setting it for the different stations?

Mr. Flam: For the different stations.

Q. —to make the axis—

The Court: Is there any claim in this case as to the method of setting?

Mr. Flam: No; there isn't but there is a description of the manner of setting. Of course, what we propose to show is, if you don't have it coaxial, you are going to run into difficulties in setting. That is the importance of the coaxial relation.

The Court: The only thing is it seemed to be creating a state of confusion here. It has been testified about coaxiality and that coaxial is a phantom and then you have still another device here that is not coaxial.

Mr. Flam: That is right.

The Court: And yet they all have a method of setting and they all work?

Mr. Flam: Well, not quite.

The Court: And the plaintiff contends that the one he has made for the Los Angeles manufacturing concern, the latest one, is just as good as the other.

Mr. Flam: It employs a different invention.

The Court: I realize it employs a different invention.

Mr. Flam: I think we can clear this up.

(Testimony of Leslie K. Loehr.)

Q. I will ask, Mr. Loehr, whether you have read this Marschalk patent that has been introduced on behalf of the defendant, Defendant's Exhibit D. Have you a copy of it there?

A. Yes; I have a copy here.

Q. In that patent there is a tappet and rocker, I suppose, is that right?

A. Yes. Figure 14 shows a tappet 44 and a rocker 34.

Q. That tappet of Marschalk and the rocker I presume do not assume a coaxial relationship when the tappet is in complete contact with the rocker, is that right?

A. Yes; that is right.

Q. I think we have had testimony about that.

A. Yes; that has been generally discussed.

Q. Can you demonstrate with anything how the Marschalk device would operate if it was actually built?

A. At my suggestion, a Marschalk lever was built at the request of or by Mr. Leishman. I don't know who built it.

Mr. Flam: I would like to have the clerk mark this for identification.

The Clerk: Plaintiff's Exhibit No. 23 for identification. [589]

Q. (By Mr. Flam): Can you demonstrate how that mechanism will work in connection with the model Exhibit No. 7?

The Court: Where is your rocker here?

A. We have to use this mechanism here.

(Testimony of Leslie K. Loehr.)

Q. Do you put it right on there? A. Yes.

Q. (By Mr. Flam): Put it right alongside of the Leishman lever so as to compare the operation of it. Will you do that, Mr. Loehr? A. Yes.

Q. That is, install it on the rocker.

The Court: I would like to ask, Mr. Flam, if you still claim, in view of the testimony of the plaintiff in this case, whether the Eibel Process case decided by Judge Taft applies as the rule?

Mr. Flam: I do, of course. In this case we have made what I think is a very important improvement and, therefore, the inventor is allowed some range of equivalents, and this very point I am bringing out now will show——

The Court: The only thing is that the plaintiff himself under cross-examination, it appeared to me, tended to narrow his invention and also at the same time narrow the interpretation to be placed upon it.

Mr. Flam: I am not prepared to argue on how narrow the [590] invention must be construed but we do feel that this——

The Court: I am just trying to find out whether you had modified your theory from the time that you filed your pre-trial brief.

Mr. Flam: No; I don't think so, your Honor.

The Court: All right; you may proceed.

Q. (By Mr. Flam): Will you demonstrate it?

A. I have mounted Exhibit 23, a facsimile of the Marschalk device, on Exhibit No. 7. I will put

(Testimony of Leslie K. Loehr.)

this up here so your Honor can see this easier. You will see I want to adjust this.

The Court: Tell me, first of all, is the tappet loose now?

A. Oh, yes; the tappet is loose. And I desire to adjust this down to the lower end of the scale here. By applying pressure to that lever here, I have moved my adjustment.

Q. In other words, you find an angular displacement of the rotor?

A. An angular displacement of the rotor by virtue of pressure applied to the shaft during the process of adjustment.

Q. Isn't that due to the way that that is balanced on there?

A. No. That tappet is in the same relative position [591] as shown in Figure 14. The reason for the movement, of course, is not quite obvious from the drawing.

Q. The general principles are the same, aren't they?

A. The fact that this is used to position the rocker to a definite place when it is locked is the same, that much of it. In other words, we have a tappet which co-acts with the rocker to bring it back to the same position as I am doing here.

Q. What about the coaxiality of this?

A. That is not coaxial, your Honor. And, when I wish to adjust this down to the lower end of the dial or either end of the dial, pressure on that lever moves that out of adjustment.

(Testimony of Leslie K. Loehr.)

Q. (By Mr. Flam): Will you demonstrate that same mode of operation with the Leishman lever?

The Court: I see it.

Q. Due to the fact this is coaxial, it stays in place?
A. That is right.

Q. And the fact that this is not coaxial causes a movement there, as quick as you touch it, that throws it out of balance?
A. That is right.

The Court: All right.

Q. (By Mr. Flam): At which end of the adjustment of [592] does this failure of setting occur in the use of the Marschalk device?

A. It will occur at either extreme end.

The Court: Suppose I wanted to see it at, we will say, 700, what about it then?

A. At 700 or near the center, where the rocker is nearly horizontal, the effect of that displacement is not as great as it is at the ends.

Q. What if I wanted to set it at say 1700?

A. Setting it at 1700, with pressure applied on the lever, you have to be very delicate about your pressure if you wish to keep it in that position.

Q. Does the weight on there have anything to do with it?

A. The weight is to retract the tappet out of interference with the rocker.

Q. In other words, the plaintiff's invention here over the Marschalk invention is more accurate and positive?

(Testimony of Leslie K. Loehr.)

A. That is right; more accurate and positive and more fool-proof, let us say, because pressure on the lever which is used to——

Q. Mechanically it works better?

A. That is right.

The Court: All right.

Q. (By Mr. Flam): Not only does it work better but is [593] it possible with the Marschalk device to adjust the rocker to a desired position in as simple a manner as would be possible in connection with the Leishman tuner?

A. Well, of course, in the Leishman tuner you have one button with one thumb screw to adjust, whereas, in the Marschalk device your thumb screw for adjusting the tappet is located probably inside the set.

The Court: There is no claim of invention on the adjustment end of it, is there? You don't make any claim on that, do you? I say that because in the patent in dispute it is a lever that is being used and the accused device is a push button type. There is no general similarity in the method of adjusting these upon which you are basing a claim, is there?

Mr. Flam: Not the general mode of adjustment.

The Court: As I understand, your claim resolves itself down to three features, the tappet, the rocker and the coaxial position.

Mr. Flam: That at least is the sense of at least one or two of these claims in issue. There are

(Testimony of Leslie K. Loehr.)

other ways of trying to define the invention, though.

The Court: I have read those claims and it is easier for me to try to work out a crossword puzzle. I am trying in my own mind to resolve those down into a simple formula that I can fix in my own mind. I can't fix in my own mind the wording [594] of each one of those claims but I am trying to ascertain exactly that which the plaintiff claims. As I understand his testimony, it is a combination of a tappet, a rocker and a coaxial position that distinguishes this from other automatic tuners.

Mr. Flam: I think that will be a fairly acceptable definition without going into very many technicalities. I think the essence is probably there. The matter of the interpretation of the claim, of course, is something I would like to go into.

The Court: I understand. I am just trying to clarify my thoughts as we go along if such a thing is possible.

Mr. Flam: Before I go on with the testimony, I offer in evidence this lever marked for identification as Plaintiff's Exhibit No. 23. And I offer in evidence this chart that the witness has been using to help him in testifying.

The Court: Is there any objection?

Mr. L. S. Lyon: I couldn't hear what you said at the last.

The Court: He is offering the chart as an exhibit, explanatory of the witness' testimony.

(Testimony of Leslie K. Loehr.)

Mr. L. S. Lyon: No, your Honor.

The Court: All right; admitted as the next exhibit in order.

The Clerk: Plaintiff's Exhibit No. 24. [595]

Q. (By Mr. Flam): Can you explain more clearly perhaps than you have before—or before I go into that, I have here a chassis of a radio set. Do you know what that is?

A. I believe that is a small Crosley radio that came out of that cabinet.

Q. The cabinet I have in my hand?

A. The cabinet you have in your hand; yes.

Q. Do you know anything about its structure?

A. The push button tuning mechanism that is on here is similar in structure to that shown in other Crosley devices, for instance, Exhibit No. 10.

Q. There is a push button there that is different, though. Will you explain to the court what it is?

A. Yes; there is one push button that has been altered.

The Court: Who did that?

A. That was done at the request of Mr. Leishman.

Q. In other words, it has been changed here for experimental purposes?

A. For experimental purposes, to show the effect of the non-coaxial feature. In other words, a little plate has been added to the treadle bar so that the surface of that plate is above the axis of rotation of the treadle bar. That portion of the tappet or

(Testimony of Leslie K. Loehr.)

of the plunger, I should say, which originally passed through and now has been extended on [596] the outside for a guide is used then in demonstrating the principle of the off-center——

Q. Wait a minute now. It comes up in place, doesn't it?

A. Yes. The cam is locked. By removing this——

Mr. Flam: Before you go much further, I would rather have a tag put on that so we can refer to it for identification.

The Clerk: Plaintiff's Exhibit No. 25 for identification.

The Court: You gentlemen are finally getting around to the point where you are demonstrating the thing I was asking about yesterday.

Mr. Flam: What we are trying to do, of course, is to show the importance of this coaxial feature.

The Court: Or unimportance.

Mr. Flam: That is the other side's job.

The Court: It looks to me like you are making a good demonstration right there.

Q. (By Mr. Flam): Will you go ahead and explain that special push button?

A. Yes. On Exhibit No. 25 I will adjust the tappet for tuning in a particular station at the end of the dial where the difficulty is most serious. By inserting a screw-driver in the aperture of the push button, I loosen the adjusting [597] screw and I set the dial into an extreme position and bring

(Testimony of Leslie K. Loehr.)

the lever down in contact, that is, the push button down in contact, so that the——

Q. Where is the pointer now?

A. We set the pointer at about 1800. And, by applying pressure on the screw to hold the tappet in contact with the rocker, I have moved the rotor out of position so that it is not in the place I desired it. We set it at 1800, yet, when we push this button, it brings it back. You have to exert exceptional diligence in the setting of that. I mean, if you have applied sufficient pressure to your screw during the process of adjustment, it would have moved out of adjustment.

The Court: There it is. If I had used a sledge hammer on it, I would have knocked it to pieces.

A. That is true. But in a device built according to Leishman's teachings considerable pressure can be applied on the screw-driver without in any way affecting the adjustment. Moving the dial to its extreme ends, the seriousness of that situation prevails at the extreme ends of the movement where, particularly on one end, the stations are bunched closest together. You can push as hard as you want on that.

Q. (By Mr. Flam): This is one of the unaltered levers?

A. This is one of the unaltered levers and one with the coaxial feature and you don't disturb the setting of the [598] radio set or of the tuning, I should say.

(Testimony of Leslie K. Loehr.)

The Court: Will you explain to me the difference in the way that sets and comes in contact with the rocker by reason of the change?

Q. (By Mr. Flam): Can you do that in connection with this chart?

A. Yes; I can do that better in connection with the chart that has been prepared.

The Court: All right.

A. This chart at the top, of course, is the co-axial arrangement in which the tappet is brought in contact with the rocker; and a line drawn from that point of contact on each side toward the center gives us a lever arm of the same length. In the case of the non-coaxial feature we have lever arms of different lengths and a line drawn from the point of contact of the tappet with the rocker on the left-hand side is shorter than a line drawn from the point of contact of the tappet with the rocker on the right-hand side to the center of the rocker. In other words, we have a force moving the tappet downward and that force will be equally distributed between the lobes of the tappet, but, since one lever arm is longer on one side than on the other, with an equal pressure it reminds you——

The Court: An equal pressure on one side over the other? [599]

A. Yes. It is like children on a teeter-totter. If you put two of them on there of the same weight, the teeter will totter. If you move one of them toward the center, the teeter-totter will move

(Testimony of Leslie K. Loehr.)

down on that end where the child is farthest from the center.

Q. Well, it is not necessary to take up time explaining a teeter-totter.

A. What I wished to compare was the distribution of the weight above the center.

Q. I still can't see, from examining these, where there is any difference in the——

A. When they are both locked?

Q. Well, this one is loose or they are both loose.

A. Press hard on it and it moves. Now, we move it to the other direction and now press hard on it. In other words, if you set this at a particular station on the dial, then, when that pressure is exerted, it will tend to move that rocker out of position. And on that particular end of the dial where the stations are bunched the closest together the slightest movement of that is sufficient to detune the set.

The Court: I think, gentlemen, we will take our afternoon recess at this time for five minutes.

(Short recess.)

Q. (By Mr. Flam): In connection with this Plaintiffs' [600] Exhibit No. 25, when you try to adjust the tappet or striker cam, when the adjustment is for some position near the intermediate position of the ends, is the fact that the tappet or striker cam and the rocker are not in coaxial alignment as important as when an attempt is made to

(Testimony of Leslie K. Loehr.)

adjust the position of the tappet for a station that is tuned in at either extreme position of the knob?

A. At the intermediate position of the rocker the difficulty of the non-coaxial feature is not nearly as serious as it is at the ends of the dial or at the extreme angular position, let us say, of the rocker. There is where the angular position becomes the greatest difficulty.

Q. Well, would it be possible by exercising great care to adjust the position of the rocker—of the tappet, rather, even at the extreme positions of the rocker?

A. Yes; it is possible to adjust it at the extreme positions, but without applying pressure to the screw or to the push button you are never certain that that tappet is in contact with the rocker therefore you are not sure of your setting and the slightest displacement of that will detune the set.

The Court: It is all right for you to go ahead with this so far as your record is concerned. The court has tried the instrument and the witness' testimony does not add anything to what the court has already ascertained from an [601] examination and an effort on its part to work the mechanical device. I had no difficulty in setting the device at the extreme end, but it is true that a person has to use a greater amount of care. That was the result of the court's own experiment with the instrument.

The Witness: Of course, this amount of off-center here is not as great as——

(Testimony of Leslie K. Loehr.)

The Court: I can understand the reason why. That has been gone into and explained.

Q. (By Mr. Flam): Why is it important to have the rocker most accurately adjusted, or rather, the tappet most accurately adjusted at the extreme positions of the rocker? Will you explain that in connection with the chart?

A. Well, I have here a chart which illustrates a rocker operatively connected to a condenser and a line drawn through the rocker pointing to a scale at the right and a line drawn through the center of the gear on the condenser pointing to a scale toward the right. A very slight angular displacement of the rocker will throw the adjustment out as much as 300 points.

The Court: That is the old principle of a lever?

A. That is right.

Q. A crowbar principle?

A. That is right. But, you see, the point is that, [602] regardless where this may be, it has thrown it out that far and whether it is over here or——

Q. It is necessary to be accurate?

A. That is right. It is necessary to accurately adjust the set.

Q. How about these new arrangements that, through the magnetic control, bring these in place; to what extent will they compensate with that?

A. I am not familiar with magnetic control radio tuners.

(Testimony of Leslie K. Loehr.)

Q. (By Mr. Flam): When any material pressure is applied to the push button associated with the non-coaxial tappet, if I may express it that way, in Exhibit 25 for identification——

A. Yes.

Q. ——did you note off-tuning movement of the set comparable with that shown on the diagram you now have in your hand?

A. Yes; I have. By mounting this set and applying pressure against the screw during the process of adjustment in the extreme position it very easily throws it out 300 points. I am demonstrating now, showing how that movement causes the rocker to rotate out of position.

Q. At the end of the scale or end of the dial where the frequency is up around 1700, or 1500 or 1600 kilocycles, are the movements—or how important, rather, is it to set [603] the dial to an exact figure?

A. Radio sets are so sharp in their tuning now that the slightest movement, even of a hair's breadth off the pointer, will detune the radio. They are very keen, so any movement at all, regardless of how little, is sufficient to affect the setting of the adjustment.

The Court: May I ask this question: In using the push button here where you sealed or have covered up the hole in the rocker so as to demonstrate the machine without the use of the coaxial movement——

A. Yes.

(Testimony of Leslie K. Loehr.)

Q. —does the extent that the gadget here——

A. You mean the tappet?

Q. —the tappet above the rocker, does that have any effect on the extent to which there will be a variation?

A. Oh, yes. If the center is moved up farther, why, of course, your difference will be——

Q. Would the fact that you have a copper plate on here of some thickness, would that have any effect on the degree of accuracy?

A. Yes. That is an attempt to bring the surface of the rocker above the axis of the——

Q. So that the height that the axis is above the rocker the greater will be the variation?

A. You mean the greater the surface is, or the greater [604] the difference between the surface and the axis——

Q. Yes.

A. —the greater will be the variation?

Q. Yes. A. Yes; that is right.

The Court: All right.

Mr. Flam: I want to offer this Crosley set, Plaintiff's Exhibit 25 for identification, into evidence. I want to offer the second chart into evidence.

The Court: Admitted in order.

The Clerk: Exhibit 26.

Mr. Flam: Also the third chart.

The Clerk: 27.

Q. (By Mr. Flam): As far as the off-center effect of the brass plate on the Crosley set, Exhibit

(Testimony of Leslie K. Loehr.)

25, and the effect and the extent of the off-center of the Marschalk lever, Plaintiff's Exhibit No. 23, do you know whether the extent that the tappet in the Crosley set was made non-coaxial with respect to this Marschalk lever—in other words, are they off-center about the same amount in both devices? Do you want to examine this set?

A. Yes; I would like to examine that other set before answering that.

The Court: There is a difference between the thickness of that metal, isn't there? [605]

A. Yes; there is a difference between the thickness of that. That is why I want to examine it. I would say that the off-center distance is substantially the same. There might be a slight variation.

The Court: May I ask one more question that occurs to me?

A. Yes, sir.

Q. May I take your screw-driver?

A. Yes, sir.

Q. Would the place that the pivot is placed in the—what do you call this?

A. The tappet.

Q. —in the tappet have any effect upon that?

A. Yes.

Q. In other words, could not the position of the tappet be changed so that it would be more accurate, or, that is, more stationary?

A. As you bring the pivot point down close to the line of contact you get greater accuracy but you get greater difficulties because of mechanical features. Your rivet becomes smaller and your pivot becomes smaller.

(Testimony of Leslie K. Loehr.)

Q. I know, but at the present time that pivot is apparently placed in about the center.

A. Well, you mean in the thickness of the large hub, let us say, to the bottom? [606]

Q. Across the bottom of that is about the center, is it not?

A. Oh, yes. It is equidistant from each end; yes.

Q. Well, that would be the center, wouldn't it?

A. Well, that is the center in that respect, yes.

Q. The middle, then, of the lower part?

A. All right, the middle, then.

Q. The placing of that pivot in any other position—could it be placed in any other position that would change the degree of accuracy?

A. Yes. If it were off center it would be less accurate.

Q. It would be less accurate? A. Yes.

Q. All right.

A. In other words, the pivot pin is normally in line with the axis of the rocker. That is a vertical line.

Q. (By Mr. Flam): Have you made any survey recently as to the push buttons or mechanical tuner mechanisms that have been offered on the market?

A. Some months ago I made an investigation of several retail stores to find out what the type of radio was being offered for sale and the type of tuner used thereon.

(Testimony of Leslie K. Loehr.)

Q. Did you have an opportunity of seeing a good many dozens of sets and of makes? [607]

A. Yes; I examined quite a number of them and found that——

The Court: What do you mean by “quite a number”?

A. Well, let us say about 8 different models, that is, manufactured by 8 different companies, or something like that.

Q. Here in the City of Los Angeles?

A. Here in the city. Well, they were offered for sale here in the city. I don't know that they were all made here.

Q. Well, I mean the retail market in the City of Los Angeles? A. Right.

Q. (By Mr. Flam): Did you find a single one of them that incorporated a tuner mechanism such as that shown in the Marschalk patent?

Mr. L. S. Lyon: If your Honor please, that would not even be acceptable for the purpose of a Gallup poll. He only samples 8 different——

The Court: The Gallup poll has been reading all right to me.

Mr. L. S. Lyon: What?

The Court: The Gallup poll has been reading all right to me.

Mr. L. S. Lyon: He only took a sample of 8 different [608] sets out of the hundreds that are made, and you could not draw any conclusion from looking at 8 sets.

(Testimony of Leslie K. Loehr.)

Mr. Flam: I do not think he said 8 sets. He said 8 manufacturers.

Q. Is that right? A. That is right.

Mr. L. S. Lyon: How many manufacturers of radios are there?

The Court: I think that is a matter for cross-examination as to the weight of his testimony, Mr. Lyon.

Mr. L. S. Lyon: He wants to draw an inference, I think.

Q. (By Mr. Flam): Will you answer now?

The Witness: Will the reporter please read that question?

(Question read by the reporter.)

A. No; I found no tuner mechanisms that used any device similar to Marschalk's device.

The Court: You found tappets, did you?

A. Oh, yes; plenty of tappets.

Q. And rockers?

A. Plenty of rockers displaced coaxially.

Mr. L. S. Lyon: If your Honor please, the Marschalk patent is for use on a radio, a timed radio. It has an automatic timer on it. I wonder if this witness bothered [609] to go look at any of this kind. Was he looking for Marschalk's device or some other kind?

The Court: That you can bring out on cross-examination, Mr. Lyon.

Mr. L. S. Lyon: To me, the testimony is so re-

(Testimony of Leslie K. Loehr.)

mote that I should hardly have to cross-examine on it.

The Court: Well, you will.

Q. (By Mr. Flam): I think some testimony has been offered here regarding the equivalents of lever and push button for moving the tappet into position for tuning a set mechanically. Can you state whether a lever mechanism is the mechanical equivalent of a push button mechanism of this arrangement?

Mr. L. S. Lyon: I object to that as calling for a legal conclusion from the witness. He has not laid the foundation at all for the proof any equivalency. The witness can't just usurp the functions of the court.

The Court: I will let him answer for what it is worth and we will still see.

A. Yes. A push lever is—or, rather, a push rod is used very often for the same function as a lever. The object of controlling any body that is moving in space is usually to define its magnitude and direction of its movement. Whether or not that would be by a lever or a plunger makes little difference; both constrain the direction. [610]

Q. (By Mr. Flam): I will show you page 2019 of Knight's Mechanical Dictionary, Volume III, having a notice on it "Published by Hurd and Houghton, 1877."

Mr. L. S. Lyon: I didn't get that answer. Did that witness say that if you just pushed with a

(Testimony of Leslie K. Loehr.)

crowbar you would get the same effect as if you used it as a lever?

Mr. Flam: Will you read the answer?

(Answer read by the reporter.)

Q. (By Mr. Flam): Do you find anything in this volume of the Mechanical Dictionary which substantiates your statement?

Mr. L. S. Lyon: I object to that, your Honor. A witness can't lift himself up by referring to authorities to support his statement. He can rely on his qualifications. You can confront an expert witness on cross-examination with contradictory statements from other authorities; but a man can't prove his own statement by reference to other authorities. He has to prove it by his oath and his own qualifications.

Mr. Flam: Of course, you have a right to ask him upon what sources he has drawn for conclusions made by him.

The Court: I will admit it.

A. Well, on page 2019 of this dictionary published in 1877 is poppet valves, Figure D, and Figure G. Reading from the description: D is a "common safety-valve with graduated lever, on which the weight may be set at any required [611] number of pounds' pressure."

Reading the description of G, we find that "the weight is attached to a stem projecting downwardly into the boiler."

Q. (By Mr. Flam): What about Figure F?

(Testimony of Leslie K. Loehr.)

A. Figure F shows "a series of removable perforated weights on the valve-spindle are employed," with weights on top, showing that as early as 1877 the force of the weight was exerted directly over the valve or by means of a lever.

Q. Are there any other instances that would show the equivalents of these two types of mechanisms?

The Court: I think we have had enough of that, Mr. Flam.

Mr. Flam: I have a photostatic copy of the title page and page 2019 of Knights' Mechanical Dictionary. In order to be illustrative of this witness' testimony I am offering the photostatic copy in evidence.

Mr. L. S. Lyon: The same objection.

The Court: Admitted.

The Clerk: Exhibit 28.

Q. (By Mr. Flam): When you examined these radio sets about which you have testified, some months ago, did any of them incorporate the tappet and rocker in which the tappet and rocker were not coaxial in the tuned-in position?

A. No. All the mechanical radio sets that are used in push-button tuning the tappet was coaxial with the treadle [612] bar, or substantially so.

The Court: You mean that you examined?

A. That I examined; yes.

Q. (By Mr. Flam): What proportion of the tuners that you saw employed a treadle bar or

(Testimony of Leslie K. Loehr.)

rocker such as we have been talking about?

A. All of them.

Q. Well, they did not all employ—didn't some of them have other types of tuners?

A. No. I mean with reference to the mechanical tuner of the push-button type. Yes; some of them had types of tuners. Yes; surely there were electrical push-button types which, of course, did not employ the treadle bar. They were switches, I understood.

Mr. Flam: You may cross-examine.

Cross-Examination

By Mr. L. S. Lyon:

Q. Are you particularly versed in the radio art? I mean, is that your field?

A. No. I am a machine designer.

Q. Have you noticed that usually you can tune a radio more sharply with an automatic tuner than you can tuning it manually to your ear? Has that been your experience?

The Court: What was that question?

(Question read by the reporter.)

A. Well, I don't quite see how that could be because [613] to adjust the tuner in the beginning would depend upon your——

The Court: Answer the question, answer the question. A. Well, no.

Q. (By Mr. Lyon): That has not been your experience? A. No.

(Testimony of Leslie K. Loehr.)

Q. You think you can tune them more efficiently, bring in the station more sharply, doing it manually to your ear than you can relying on the automatic tuning that the manufacturer has put in the device?

A. Well, I don't quite understand that question. I mean you have to adjust your radio sets in the beginning and that usually is done with your ear.

Q. Is it always? A. As far as I know.

Q. Well, do you know?

A. No; I don't know definitely that everybody adjusts a radio with their ear.

Q. Do you know whether or not it is the practice to set these automatic tuners by your ear or by some other method?

A. Well, from my experience, I believe you set it with your ear.

Q. Have you had any experience? [614]

A. Yes; setting a few radio sets.

Q. You have not been in that business?

A. Oh, no; I haven't been in that business.

Q. Have you had any opportunity to see how the manufacturers set these tuners?

A. No; I haven't.

Q. Then, you don't know how they are set at the factory. But I am asking you, just you check——

A. I don't know that they are set at the factory, even.

Q. Have you seen one of these sets like there is on so many automobiles, where there are a certain

(Testimony of Leslie K. Loehr.)

number of buttons for automatic tuning and then a switch that allows you to throw over to manual tuning?

A. Yes; I have seen some; in fact, a friend of mine has one on his automobile.

Q. Have you noticed whether or not he gets sharp tuning with the buttons, with the automatic buttons?

A. Well, I believe you are referring there to those electrical buttons rather than mechanical buttons, are you not?

Q. What about the electrical buttons? Let us talk about those. They give you a sharper tuning than you can get by manual tuning to your ear, do they not? A. I don't know.

Q. Have you made any comparison of that kind? [615] A. Not definitely; no.

Q. This matter of what you call coaxiality, another term for that is on-center. I think Mr. Flam used that. Do you understand that? Would you say that was a synonymous term?

A. Used perhaps to describe the action of the tappets or the center of the tappet with respect to the center of the rocker, you might say that they were on-center if they were coaxial. If that is what you mean?

Q. Yes. If those two axes are in alignment, why, they are on-center; if they are in any misalignment, why, they are off-center, are they not?

A. Yes; in that sense they would be off-center.

(Testimony of Leslie K. Loehr.)

Q. And you, as a machine designer, you know, do you not, that it is part of your profession to see that centers are in alignments in mechanical designs? When a misalignment produces any difficulty in the operation of the device you set the machine, as part of your profession as a machine designer, to study and analyze the design to see that those misalignments are avoided; isn't that correct?

A. That is right.

Q. That is your profession, really, to see——

A. Well, machine design, not studying to see that things are on-center, no; but machine design is my business.

Q. Yes. As a machine designer one of the things [616] a machine designer does is to watch things to see that things that ought to be on-center are on-center in his design?

A. That is correct.

Q. Whenever you have two members that you want to turn together in the same orbit or to maintain contact with each other as they are turning together, you know that they should be on-center, isn't that correct?

A. Well, they may be coacting in such a way that the resultant would be a center.

Q. The resultant; either they are actually on-center or the resultant amounts to the same thing; isn't that correct?

A. Yes; so they will function together.

Q. In other words, this matter of putting these

(Testimony of Leslie K. Loehr.)

members on-center is one of the common tools and one of the common experiences of a machine designer.

A. Yes. If you have reference to machine elements in a machine; yes.

Q. Let us take it as simple as the hands of a watch. You want the hour hand and the minute hand, say, to turn together; if you wanted them to turn together and stay together you would know that they had to have a common pivot, would you not, or a common axis?

A. If you want the two hands to be together and rotate [617] about the same axis, of course it would be necessary to impose one over the other.

The Court: They would have to, wouldn't they, if you are going to have a watch?

A. Yes. And, you see, your Honor, perhaps during the early development of watches——

The Court: The only reason I am asking that question is that it seems to me you are, in a sense, avoiding answering his question.

A. Well, I don't mean to.

The Court: Without giving a clean-cut direct answer. You are hedging a little bit.

The Witness: Well, I don't mean to hedge about it because his statement is correct. You have to have the centers.

The Court: Let us get down to it.

Q. (By Mr. L. S. Lyon): If the center of those two watch hands were off-center the watch could not keep time, could it?

(Testimony of Leslie K. Loehr.)

A. No; there would be interference of the rotation on the one hand.

Q. And wherever in a mechanical design you have two members that are to turn together or rotate together, as a mechanical designer you must see that they are on-center? A. That is right.

Q. Or sooner or later somewhere in the operation they are going to clash; isn't that correct?

A. That is right; yes.

Q. Now, isn't that what happens in this tappet on this rocker, just the same thing?

A. No; not exactly, because, you see, you are moving the one element in position to actuate the other just a little bit different than in a watch, let us say, where the hands are disposed that way permanently. This is not a permanent disposition of those two pieces. Only when they are pushed into contact does that prevail.

Q. Yes. But the only time that they set up any unbalanced forces or cause any interference is when they are in contact; that is correct, isn't it?

A. That is right.

Q. So the principle is really the same, isn't it? The principle is that you desire those two parts, the tappet and the rocker, to turn together, so you want them to be on-center; isn't that the principle?

A. Yes; that is the principle.

Q. Now, you have said that a lever and push button are equivalents. Are you answering in a legal sense or in what sense are you answering?

(Testimony of Leslie K. Loehr.)

A. Well, I am answering in the sense that, as disclosed on the chart, the thing that we are essentially concerned [619] with is the movement imparted to the tappet as it approaches the rocker. Now, what you desire to do is to control the direction of that movement and the amount.

Q. Then, you think anything that will accomplish that result is an equivalent?

A. As far as movement of that tappet is concerned, I certainly do.

Q. Then, your definition of an equivalent may be different from mine. A. That may be.

Q. Perhaps you had better tell us, if you can, how you define an equivalent in the sense that you have used it in your testimony.

A. In the sense that I have used it, I think I have already explained that, as far as the tappet is concerned, what you desire is the control of the direction of the movement of that tappet with the lever, either control its direction by the movement of the lever about the shaft Q on the push rod, the guides, and control the direction of that push rod so that it reaches the—so that the tappet reaches the rocker and that their axes coincide.

Q. Is there any similarity in that use or comparative use of a lever and a push rod between those two, except that they both perform this same function that you have described? [620]

A. That is the only place where they are similar because that is all you are concerned with.

(Testimony of Leslie K. Loehr.)

Q. Otherwise, their own method of accomplishing that function, and their own form, etc., may be entirely different?

A. The fact remains, however, that——

Q. Well, can you answer that?

The Witness: Please read the question again.

(The question was read by the reporter.)

A. The form of the levers may be different; oh, yes.

Q. Have you given any consideration to whether or not you would regard the two bars, the two inter-related bars actuated by the tappet in this Zenith device, would be the equivalent of a rocker?

A. In the respect that they impart rotary motion to a condenser.

Q. In the respect that they perform the same function they are equivalents, are they not?

A. Mechanically, no. No; they are not equivalents in that respect. I mean that they do transmit motion to the condenser shaft.

Q. Those two bars, these two inter-related bars in the Zenith device, perform the same function in that device that the rocker does in Mr. Leishman's patent, do they not?

A. That is right. They rotate the condenser.

Q. And in that sense they are equivalents, are they not?

A. Yes; they are equivalents in that sense and they both of them rotate in the condenser.

Q. In the same sense that you have compared

(Testimony of Leslie K. Loehr.)

a lever and a push button a moment ago as equivalents, these two bars are the equivalent of a rocker, isn't that true?

A. Well, no. There is a little bit of difference there. You have given linear displacement to a member; whereas, in this position you have given rotation to a member.

Q. Well, I understand that. But these bars are the equivalent of the rocker in that they perform the same function, and in that sense they are equivalent for the same reason that you said a lever and a push button was equivalent a moment ago?

A. They rotate the condenser, if that is what you mean.

Q. Can't you answer that question just definitely? A. That is exactly what I said.

Q. Or else deny it?

A. No; I can't answer that question without an explanation due.

Q. I notice in your chart, Exhibit No. 24, you have omitted or dropped off part of the plunger in those [622] illustrations of the defendant's plunger. Did you do that on purpose?

A. Well, we are willing to concede that the guide that extends on through for guiding that plunger travels the same as it does in the case exactly.

Q. Is not that the real reason for that portion—is not that the real reason for extending those

(Testimony of Leslie K. Loehr.)

plungers through the rocker plate in the defendant's device, so as to continue down to get a bottom bearing for the plungers?

A. No; I don't think it is the real reason in the defendant's device.

Q. Are you sure of that?

A. Well, that may be their reason but it still remains that the axes of the tappet—or the axis, rather, I should say, of the rocker coincide when they are in the operative position.

Q. You would say it would be a pretty poor design, as a designer, if they did not have those centers aligned, wouldn't you?

A. Well, here is a demonstration——

Q. Answer that yes or no, as a designer, if they did not have?

A. Yes; you have got to align the plunger.

Q. No. I am saying this: If you examined a tuner like the defendant's and found that there was any such [623] discrepancy as you pointed out in that model here, where you had disturbed the coaxiality, it would be apparent to you at once that the trouble was that you did not have the centers on center; and you would say that it was a poor design from the standpoint of an ordinary designing job, wouldn't you?

A. No; I am not sure that I would.

Q. Well, are you sure that you would not?

A. No; I am not sure that I would not. It would require some study, even this.

(Testimony of Leslie K. Loehr.)

Q. You give study every day, as a designer——

A. That is right.

Q. ——to check up on concentricity and alignments and things being on center?

A. That is right.

Q. That is your business as a designer?

A. That is right.

Q. And you could check that out of that device without much trouble, couldn't you, if you saw any such difficulty as you have been exhibiting here? A. Well, I might.

Q. Now let me have that device just for a minute. We are referring to Exhibit No. 25. When you came to substituting a different tappet here at this end push button you took the trouble of putting on some kind of an addition [624] here. What did you do that for?

A. That is a guide for the plunger.

Q. What did you want that on there for?

A. I just explained to you a minute ago that you had to guide the direction of that tappet.

Q. Why?

A. In order that it can approach the center or the axis of the tappet can approach the axis of the rocker.

Q. In other words, in the defendant's device it is necessary that there be a bearing below the rocker for the plunger as well as a bearing above the rocker, is it not?

A. No. No; I can put a guide up here.

(Testimony of Leslie K. Loehr.)

Q. Well, you have to have a guide somewhere, don't you?

A. Oh, yes. Yes; you have to have a guide.

Q. And the correct place is to have it at both ends of the plunger, isn't it, from a designing standpoint?

A. No; not necessarily.

Q. The convenient place, at least, where he puts it. But you could not just put a push button on here on a plunger and a tappet on there and not have any guide for it?

A. That is right. That is what it is there for.

Q. Is there any guide in the plaintiff's patent here in his drawing? Has he got any guide at all?

A. The effect of the guide is the arm rotating about the shaft.

Q. In other words, the plaintiff's reissue patent design here for guiding his tappet depends on mounting it on a shaft Q and rotating the tappet about that shaft by means of the lever?

A. Rotating the lever about the shaft, yes, which carried the tappet.

The Court: Now, let me get the point.

Q. Do I understand that the effect of this bar, which I believe in the patent is described as Q, serves the place of a guide that is used on the push button?

A. Yes. You see, your Honor, it constrains the movement about that point, about that axis.

Q. It definitely positions it?

A. Yes; or definitely positions it.

(Testimony of Leslie K. Loehr.)

Q. There is a definite axis there so it will go right back to the same place each time?

A. That is right.

Q. (By Mr. L. S. Lyon): Then, there is more to this question of changing from a lever type to a push button type than just merely the difference between a lever and a push button. You have also got to give consideration to a different way of guiding a push button from the way that the plaintiff shows of guiding a lever; isn't that correct?

A. Well, the mere fact that they are guided, is that what you mean?

The Court: Well, just a moment now.

Q. Under the plaintiff's patent here there was a guide because it was tied into an axle there that in the patent that is described as Q?

A. That is right.

Q. And that guides the lever so that when the tappet comes down it hits exactly the same place on the rocker every time?

A. That is right.

Q. All right. Now, when you eliminate Q or the tie-in to Q and want that tappet to hit exactly the same spot in the rocker every time, you have to have something as a guide?

A. That is right. You substitute something for Q.

Q. So that in the change from a lever to a push button style you have to have a guide for that push button that takes the place of the anchor to which the lever was fastened before?

A. It takes the place of Q; yes.

(Testimony of Leslie K. Loehr.)

The Court: That was the point, was it not?

Mr. L. S. Lyon: That is right.

A. That is right.

Q. And in the defendant's design, why, the defendant [627] has its push button plunger and he has provided a guide above the rocker and a guide below the rocker. You notice that, do you not?

A. Yes; depending upon whether it is horizontal or vertical.

Q. And in all these various other tuners that have apparently been placed on the market since the defendant's design was first put on the market for sale you have noticed that, have you not?

A. With the exception of—

Q. 20? A. 17, in which the guide is above.

Q. Yes.

The Court: 17, is that the other invention of the plaintiff?

Mr. Flam: No.

Mr. L. S. Lyon: No. This is this device which you stated looked like a cradle.

A. I might also add that in Exhibit 20 they have gone around the side for the guide.

Q. But they are above and below.

The Court: Then the main point is they have guides? A. That is right; they have guides.

Q. Whether they are up above or where they are, they have [628] to be guided if it is not tied into an axis? A. Like on a lever.

Q. Like on a lever? A. That is right.

(Testimony of Leslie K. Loehr.)

Q. (By Mr. L. S. Lyon): And the defendant's plunger is made to extend through the rocker so that he can get that guide below the rocker; that is correct?

A. That is right. Yes; that is right.

Q. And you have not attempted to show in your comparison on this Exhibit 24 the bottom guide or the fact that the plunger extends through the plate for the purpose of acting with the bottom guide, have you?

A. The chart does not show it, but from the practical point of view we are willing to concede that that guide does extend below. I mean we are moving that, we are illustrating a force, rather. It is schematic.

Mr. L. S. Lyon: That is all, thank you.

Redirect Examination

By Mr. Flam:

Q. In making the adjustment of sets utilizing mechanical tuners, isn't it a fact that you wish to tune the set into a different set of stations, depending upon where you happen to be using the set?

A. If you mean the locality?

Q. Yes. A. Yes, indeed. [629]

Q. In other words, if you were in the eastern part of the United States——

The Court: You do not have to go as far as the east. I drove up to Portland this last summer

(Testimony of Leslie K. Loehr.)

and I know that we had trouble and had to abandon our tuning device; so the court will take judicial knowledge of that. If it is not judicial knowledge, it will take actual knowledge from experience. It is one of the experiences of life that we are all enjoying these days.

Q. (By Mr. Flam): On that basis would it be possible to set radio sets in the factory for use indiscriminately all over the country? A. No.

Mr. Flam: That is all.

Mr. Flam: We have been talking about these disclaimers and I would like to offer in evidence certified copies of two disclaimers filed in connection with the reissue patent in suit.

The Court: They may be admitted.

The Clerk: Plaintiff's Exhibits 29 and 30.

Mr. Flam: Also, since the reissue patent is a division of a prior application, and in order to complete the record, I will offer a copy of Leishman Patent No. 2,084,851, of which the reissue application is a division.

The Court: That is the 1934 patent, [630] is it?

Mr. Flam: That is the patent that was applied for December 15, 1934. It shows other forms of tuners that are attempted to be protected by the claims of that patent.

Mr. L. S. Lyon: Of course, that offer does not really show what was in that application at the time that the parent of the original application was issued, upon which the reissue patent in suit

was granted, because that is what the patent issued on, what was left of that original application.

The Court: He says it completes the record.

Mr. L. S. Lyon: I don't think I have any objection to it, but I don't think it establishes the point Mr. Flam says he wants to establish.

Mr. Flam: We may have to offer in evidence a complete file wrapper of that original case. On doing that, of course, this exhibit may be withdrawn.

Your Honor, I didn't think we would finish quite so soon. We expect to be here with another witness tomorrow morning.

The Clerk: Do I understand that last exhibit is admitted?

The Court: Admitted.

The Clerk: Plaintiff's Exhibit No. 31.

The Court: How long is it going to take you to finish?

Mr. Flam: I think we can finish in about an hour tomorrow. [631]

Mr. Flam: Of course I subscribe to the proposition that the differences between the two records should be under consideration by your Honor, but I don't want the testimony to be taken as binding upon the defendant in this action.

I think it is entirely proper for your Honor to read the entire record and I suppose it is available to your Honor, to see what actually there is in the way of testimony between the two cases—whether there is any justification for your Honor

to come to a different conclusion, as we hope your Honor will.

In that connection, in order to be fully apprised of what happened in that case, the plaintiff in this action has filed briefs in the Circuit Court of Appeals in the Associated Wholesale Electric case. There is a great deal of reading matter there and I would like to give it to your Honor without offering it in evidence if there is no objection by the other side.

And also in connection with the recently decided case in the Ninth Circuit, No. 11652, I have a copy of a petition for rehearing. I think a copy has been served on Mr. Lyon. That may throw some light upon our basis for it being an incorrect interpretation of the law or the rule relating to summary judgment.

The Court: Of course I was going to read all that I feel is necessary to read and that is going to be a good deal. [632] We will receive this without ruling on the objections made at this time unless further investigation should indicate differently.

I would like to be able to bring about my own solution of the case. The objection will be noted and the matter may be discussed further if found to be appropriate, in the briefs of counsel.

Mr. Lyon: Plaintiff rests, your Honor.

Mr. Flam: If your Honor please, there are some exhibits I find that have been marked for identification and not formally offered in evidence. I want to offer them now. Exhibit V, consisting

of page 21 of the June, 1937, Radio Retailer. I offer that exhibit in evidence.

The Court: It will be received and marked filed.

Mr. Flam: I likewise offer Exhibit X, the Gillan tuner in evidence.

The Court: It will be received and marked filed.

The Clerk: Defendant's Exhibits V and X received in evidence.

(The documents referred to were marked Defendant's Exhibits V and X, and were received in evidence.)

Mr. Flam: I also offer in evidence Exhibits JJ-1 and LL-1. These are the plungers identified with exhibits JJ and LL.

The Court: It will be received. [633]

(The articles referred to were marked Defendant's Exhibits JJ-1 and LL-1, and were received in evidence.)

Mr. Flam: Exhibit RR was not received in evidence over the objection of opposing counsel. That is a page from a leaflet in connection with electrical measurements. I am now renewing my offer.

Mr. Lyon: I think our objection really goes to the weight of it. On thinking the matter over, your Honor, our objection really went to the weight of it and with that understanding perhaps the objection should be overruled. I think our objection really goes to the weight of it.

The Court: The exhibit will be received and marked in evidence.

(The document referred to was marked Defendant's Exhibit RR and was received in evidence.)

The Court: Are we together on the fact that Exhibit LL-1 for identification is not in evidence?

Mr. Flam: I think I offered it just a moment ago. If I didn't I meant to offer Exhibits JJ-1 and LL-1.

The Court: In any event they will be received.

Mr. Flam: In this book of patents, which has been supplied to the court, there are a number of patents that show the volume of inventions and patenting relating to automatic tuning in and about the period when the Leishman application was filed and the Leishman patent issued. [634] That is in furtherance of showing a different state of facts here as compared with the Associated Wholesale Electric case in which Judge Harrison said there appeared to be a dearth of inventions in this field.

On that basis I would like to offer the following—I am offering the following patents in evidence. First, the patent that appears as No. 2 in the book, Bast, No. 1687420.

Mr. Lyon: I will object to this as not rebuttal, your Honor. The plaintiff has completed his case without these matters in the record to refer to or to cover and it would require the case to be thrown open, wide open, and present testimony on them if these patents are received.

The Court: I think so, Mr. Flam.

Mr. Flam: I think I mentioned on the record a few days ago that I was going to offer certain exhibits in evidence and otherwise we were through.

The Court: Can you refer the court to that portion of the transcript?

Mr. Flam: At page 312, your Honor, at the close of Defendant's case. I said, "I would like to reserve the privilege of introducing in evidence certain other matters as to which, probably, a stipulation has been entered into, before the end of the trial. I think I can probably formulate them tonight and introduce them tomorrow."

We went on from there and I overlooked the introduction [635] of them until just now at the conclusion of the plaintiff's case.

The Court: I don't want to restrict either of you in offering whatever you think is relevant here, but on the state of the prior art it seems to me that when you took up the case on the theory that you had the right to open and close you should have explored the contentions as to the state of prior art fully at the time of the presentation of your case.

Mr. Flam: It is not, your Honor, so much a matter of prior art. It is not at all a matter of prior art. Judge Harrison in his decision said:

"There are only two other patents relating to automatic tuning before Leishman."

Now, they are not pertinent except for the fact that these patents are in existence and your Honor might almost take judicial notice of the fact that

these patents are in existence without offering anything at all about what they show, so long as they are entitled in the title as relating to automatic tuning; and no evidence will be offered other than that and for that purpose without——

The Court: How many are there?

Mr. Flam: There are about 15 or 20 in all in this volume. I think Mr. Lyon has a copy of the volume in his possession. [636]

Mr. Lyon: May I ask if these patents were all in evidence before Judge Harrison?

Mr. Flam: None of them.

The Court: That is the point.

Mr. Lyon: The Bast patent isn't.

Mr. Flam: The Bast patent was not in evidence. I think the Bast patent was referred to in the brief for the first time in the Circuit Court of Appeals.

The Court: But not in evidence was it referred to.

Mr. Flam: Was referred to by number in the brief and I think the opposing side made quite a point about the fact that there was no evidence of other patents in that case.

Mr. Lyon: If I can understand just what is contemplated in these patents we can reach an agreement and obviate this.

If these are the same patents as in the Radio Condenser case that were presented in the Circuit Court of Appeals and which were urged by Mr. Leishman constituted new evidence upon which

they should reconsider their decision in the Associated case, and which Judge Matthews said was not new evidence and wouldn't change his opinion, if it is those patents and Bast is one of them, why, I will withdraw my objection just so the record may be complete before this court. But if they are new prior art patents that haven't been considered at all, why, I insist on my objection.

Mr. Flam: They are not prior art patents and they are [637] not referred to for that purpose. I think I made it clear to your Honor what the purpose was. The purpose was to show that there was activity in this field. Of course we already have some evidence about it but not as complete a file as Mr. Leishman has collected here on that particular point. There were inventions in the field of automatic tuning, a good many of them at that time.

The Court: I am not going to foreclose the other side from exploring any patents that are offered and received in the case. But I don't want the case to get in the same position as apparently the other two cases got into. That is the reason why I am making these statements. The case should be decided between the litigants so that the industry can go forward with whatever activities it has so that patent rights may be conserved instead of having the situation that we had in some of the earlier patent cases in this circuit where there was nothing done for years. In one case it went for 20 or 25 years. That was one of the flota-

tion cases from Montana. The record should be made just as complete as the litigants desire to make it, but I do think you should have in your case in chief adopted that course when you assumed the opening and closing of the case. I think you should have explored it. You didn't do it but I am not going to foreclose you and for that reason I am going to give the other side an opportunity to explore it. [638]

Mr. Flam: Perhaps we can come to a satisfactory conclusion by a mere stipulation to the effect that up to the year 1937 there were at least 20 or 25 other—I will make it more definite. At least 30 patents that dealt with automatic tuning for radio receivers. That is about the sum and substance of this whole offer.

Mr. Lyon: I couldn't make a stipulation of that kind because it would be important as to what those tuners were. As I understand Judge Harrison's opinion, he was pointing out that this feature of coaxiality wasn't anything new; that as soon as there was a tuner available with an adjustable tappet and rocker it was adopted in that kind of tuner and coaxiality was the only feature that was claimed to be new and in his opinion the patent was lacking in patentable novelty. He may have used language that you can construe a little broader than that but I think that is what he meant.

Mr. Flam: In the record of the Associated Wholesale case, your Honor, the opinion goes as follows. I don't know where it is in Volume 36.

The Court: I have it.

Mr. Flam: "The demand for an automatic tuning device did not become acute in the radio industry until the later part of 1936 or the early part of 1937. This is demonstrated in many ways. The [639] record discloses a dearth of inventions in this field."

Then on the preceding page the court said:

"The facts in this case do not indicate an appreciable demand for a tuner until about the fall of 1936. The Schaefer patent No. 1,906,106 was issued in 1933, and the Flaherty patent No. 1,948,373 in 1934. The evidence reveals no other issued patents until 1937 and 1938 when the plaintiff obtained two patents."

Now, all we want to do is to have something in the record here that there have been numerous other patents relating to automatic tuning in that period.

I thought I would cut short the necessity of having a reopening of the proof to settle it. It is just for that purpose. If any statement can be made by Mr. Lyon to the effect that these are not patents relating to automatic tuning that can be done—no evidence need be introduced to interpret these parts or anything else. I don't want it. I don't think it is necessary. It is merely directed to this particular point in Judge Harrison's opinion. He was not aware of all of these prior developments in automatic tuning.

The Court: Are you familiar with the record

in the case that you say is on appeal to the Tenth Circuit Court of Appeals, Mr. Flam?

Mr. Flam: I am somewhat familiar. I think I know pretty [640] well what is in there. If your Honor means whether these parts are in there I think I can find out very quickly. Mr. Leishman says there are only about ten of these patents that are in that record.

The Court: You only had six here, I believe.

Mr. Flam: There are about 25 or 30 in this volume relating to automatic tuners as of that period.

The Court: And you want to put all of those in the record, is that it?

Mr. Flam: There was intensive activity.

The Court: You are proposing to offer all of those patents?

Mr. Flam: Yes, your Honor, for that purpose only.

The Court: I will permit you to do so but I will give the other side an opportunity to answer them if they desire. That will prolong the case, of course, if they do desire to do so. What are the patents?

Mr. Flam: I will offer them individually.

The Court: The objection will be overruled as to the Bast patent for the reasons assigned and not otherwise.

The Clerk: Defendant's Exhibit HHH in evidence.

(The document referred to was marked Defendant's Exhibit HHH, and was received in evidence.)

Mr. Flam: And I offer in evidence Faas, 192820, No. 5 in the book of patents. [641]

Mr. Lyon: I don't want to repeat my objection if it may be understood as just applying to each one of these individual offers.

The Court: It will be so ordered and the objection is overruled for the reasons heretofore stated.

The Clerk: Defendant's Exhibit III in evidence.

(The document referred to was marked Defendant's Exhibit III, and was received in evidence.)

Mr. Flam: I offer in evidence Patent No. 1865704. It is No. 7 in the book of patents.

The Court: It will be received and marked filed.

(The document referred to was marked Defendant's Exhibit JJJ, and was received in evidence.)

Mr. Flam: I offer in evidence Trenor No. 1712181 in evidence appearing as Patent No. 8 in the book.

The Court: I do not see how that patent can assist the court. The objection is sustained as to that one.

Mr. Flam: It is one of the patents that shows on the second page of the drawings——

The Court: You are talking about Trenor No. 1712181?

Mr. Flam: Yes.

The Court: Filed November 21, 1922.

Mr. Flam: Yes, your Honor, filed November 21, 1922.

The Court: It wouldn't help the court very much.

Mr. Flam: Then we will omit that, your Honor. I will [642] go to the next one. I offer in evidence Vasselli, re-issue No. 17002, found as No. 9 in the book.

The Court: Objection overruled.

(The document referred to was marked Defendant's Exhibit KKK and was received in evidence.)

Mr. Flam: I offer Patent, Flocco No. 1591417, appearing as No. 11 in the book.

Mr. Lyon: It doesn't seem to me, your Honor, that that patent bears on your offer, Mr. Flam. This is a remote control device rather than a tuner in the sense that we are talking about.

It is not an automatic station selector even. It is a remote control device.

Mr. Flam: Of course whether the tuner is operated from a remote point or directly by hand would not make any difference. It would still be an automatic tuner.

Mr. Lyon: This doesn't have any automatic feature. This merely turns a condenser. Maybe if we can keep some of these out we can save time in putting evidence on about them.

Mr. Flam: In order to save time I am willing

to omit that, your Honor, and go to the next one.

I offer in evidence the patent, Trogner, No. 1727575, appearing as No. 12 in the book.

Mr. Lyon: This patent I don't think belongs in the [643] record, Mr. Flam, because it is for a transmitter. It isn't for a radio receiver—for tuning a radio receiver at all. If you will look at these, if you don't mind my calling attention to it——

Mr. Flam: That is all right.

Mr. Lyon: We can avoid a lot of testimony.

Mr. Flam: I am glad to have you call my attention to it because actually I had not made any great study of these because I didn't think it was necessary. That may be omitted, your Honor.

I offer in evidence Vasselli, No. 1846289, appearing as No. 13 in the book.

The Court: I don't believe that has any data that would be of value to the court.

Mr. Flam: It is a station selector, your Honor.

The Court: That is a rather far-fetched position. It is a matter of common knowledge, isn't it, that there was a great deal of work of similar type done during that period or thereabouts? If you are going to put every device that is of similar nature in this record I am afraid we will never get through. [644]

Mr. Flam: Apparently there wasn't enough of that knowledge present before Judge Harrison.

The Court: Judge Harrison took that case, as I told you before, the case that enunciated the principle that I have never seen improved by any of

the later decisions, the Eibel Paper case, and from that he reasoned his reasons to the conclusion that he reached that he expressed in his opinion.

If in addition there is something that he didn't consider that would be helpful, that would be one thing, but just to throw forty patents to the court and say, "Here it is," that doesn't help. Any of these patents that are received will have to be discussed in the briefs. I am not going to undertake to analyze these patents independently of the briefs of the litigants.

Mr. Flam: I don't expect that. We will have to show——

The Court: I apprehend that your client here wants you to put in these forty patents.

Mr. Flam: I can put Mr. Leishman on the stand and simply ask him one question, how many patents there were that he was able to find relating to automatic tuning.

The Court: If he won't say forty, I will hear him. But if he will say forty, I won't hear him.

Mr. Flam: He will say over and above those that we have identified, I don't venture to say more than ten or fifteen [645] that he has known about.

Mr. Lyon, Sr.: That won't answer our point, because our point is that these patents are not pertinent because they don't show that anybody was trying to make a tuner of the adjustable tappet type with a rocker, and didn't know enough to make it coaxial. The only point that Mr. Leishman is relying on is coaxiality, so if there were fifty other

tuners that didn't have any room for coaxiality, couldn't have been made coaxial anyhow, because they are not of that type of tuner, why, I think that these have nothing to do with the case.

Of course, that is argument and we will point it out in our brief, but I do want whatever is to be relied on, I want it to be in the record so that we can point out why we distinguish it.

The Court: Yes, you have a right to that, notwithstanding the fact that he should have done it at the time he presented his case in chief.

The objection will be sustained to the last offer.

Mr. Flam: I offer in evidence the patent of Bird, 1,925,651, appearing as No. 18 in the book.

The Court: That will be received.

The Clerk: Defendant's Exhibit LLL, in evidence.

(The document referred to was marked Defendant's Exhibit LLL, and was received in evidence.) [646]

Mr. Flam: I offer in evidence the patent of Morin, 1,828,197, appearing as patent 19 in the book.

The Court: So received.

The Clerk: Defendant's Exhibit MMM, in evidence.

(The document referred to was marked Defendant's Exhibit MMM, and was received in evidence.)

Mr. Flam: I offer in evidence the Hirsch pat-

ent, 1,942,599, appearing as No. 20 in the book of patents.

Mr. Lyon: This is a very complicated patent, and I don't think it has a place in what you are looking for. It starts out and talks about an automatic time responsive setting mechanism for selective timing of electrical circuits. It has particular reference to mechanism for responding to the pre-determined frequency at a pre-determined time.

Mr. Flam: That, of course, is true of the Marschalk patent upon which the other side most strongly relies. It is exactly that same kind of mechanism.

Mr. Lyon: This hasn't anything to do with a tuner for a television station, or combination radio and television station, or a radio.

The Court: Well, it has some drawings that might look like some of the parts that are involved in the patent in suit.

Mr. Lyon: If somebody can invent a radio tuner that when the advertising comes on it will turn the machine off and then [647] start it again, it would be this type of device, your Honor.

The Court: I don't think it has much value in the case, Mr. Flam. The objection will be sustained.

Mr. Flam: I offer in evidence the patent to Lefebre, 1,932,668, appearing as No. 21 in the book of patents.

Mr. Lyon: This, Mr. Flam, is a motor tuner, a motor-driven tuner. Mr. Schwarz testified about there being lots of those in use. Are you interested in motor tuners?

Mr. Flam: It was one form of device that was attempted in those days.

The Court: Objection sustained.

Mr. Flam: I offer in evidence the patent to Nelson, 2,042,956, which appears as No. 23 in the book of patents.

Mr. Lyon: This is another timing device, Mr. Flam.

Mr. Flam: This is in conjunction with tuning. In fact, the title so says.

The Court: Were any of these patents—I don't mean any of them, because I know some of them are, but I am speaking now of those that are offered for the first time in this case, or referred to in this case before this court for the first time—patents which were cited in any of these interference proceedings?

Mr. Flam: I imagine some of them were. I would say that I am quite certain that some of them were. I am not sure whether all of them were. [648]

The Court: Of course I have not read the whole patent, I have looked at the drawings, and there are some drawings that look like drawings that are annexed to the patent in suit. That doesn't help me very much in interpreting the patent.

Mr. Flam: I think, if I may interrupt, we can rely upon the testimony taken in the course of the trial, in addition to those that I have already offered, and close the matter now. That will save further controversy about that matter. I don't want to say what your Honor thinks about it, but I think

we have introduced enough evidence now to show this was not just something that sprang out of nothing. There was an intense amount of work done in connection with radio tuning before and after Leishman came upon the field.

The Court: The court is not going to give any expression to that phase of it until the case is studied thoroughly.

The Clerk: Is that last offer withdrawn, Mr. Flam?

Mr. Flam: Yes.

I would like to call Mr. Ellsworth to the stand.

ALLAN R. ELLSWORTH

called as a witness by and on behalf of the defendant, in rebuttal, having been first duly sworn, was examined and testified as follows:

The Clerk: Your full name, please?

The Witness: Allan R. Ellsworth.

Direct Examination

By Mr. Flam:

Q. How old are you, Mr. Ellsworth?

A. Forty-three.

Q. Where do you reside?

A. 8469 Hollywood Boulevard, Los Angeles.

Q. What is your present occupation?

A. I am a manufacturer of phonograph records.

Q. Have you had anything to do with radio receivers in the past?

A. I was chief engineer of Packard-Bell Company from 1933 to 1945.

(Testimony of Allan R. Ellsworth.)

Q. In the course of your duties did you have anything to do with automatic tuning devices for radio receivers?

A. Quite a lot to do with it.

Q. What, will you state? A. Pardon?

Q. Will you state what you had to do with it?

A. Design of receivers using automatic tuners.

Q. Where did you get the automatic tuners during this period?

A. We purchased some tuners from Quality Hardware in Chicago.

Q. Any others?

A. I think that is about the only type we used other than the electrical type.

Q. Did you get any tuners from Crowe Nameplate?

A. That is correct, we did. I think what happened was we originally bought them from Quality Hardware and later they were available from Crowe Name-Plate, but it was essentially the same type of tuner. It has been quite a few years, and I might be a little hazy on some of these things because of the time element, and I haven't been in contact with it, naturally I don't recall some of these things accurately.

Q. What were the tuning devices that were used with these automatic tuners? I mean, what were the devices that were used in the electric circuit that was operated by these radio tuners?

A. We operated a variable condenser.

(Testimony of Allan R. Ellsworth.)

Q. Can you state what the custom was with regard—what your own experience has been with regard to the necessity of having the radio condenser provide a light load or large load in connection with the tuning mechanism?

A. There had to be an absolute minimum of load in connection [651] with the tuner. If there was any load at all it wouldn't position accurately, it was too hard to push the button. It would be rather difficult for a child or a woman to operate it.

Q. You say that the condensers used in automatic tuners at the time they came, that you were designing radio sets for them, had to have low resistance to turn them, is that right?

A. That is correct.

Mr. Lyon: Just a minute. Is this witness talking about the subject in abstract, or is he talking about the particular tuners he got from the Quality Hardware or Crowe Name-Plate Company? If he is talking about something else, I want to know what it is and what he knows about it.

Q. (By Mr. Flam): These tuners that you obtained from Crowe Name-Plate or Quality Hardware included what elements? Did it include the condensers or other devices for tuning radio circuits?

A. No, they were just the unit itself; the condensers were purchased separately from another source. And, answering your question more fully, that you previously asked, we had to have the con-

(Testimony of Allan R. Ellsworth.)

condensers made specially with a very light torque in order to make it possible to use these tuners. Condensers as were supplied at the time we were working with push-button tuners were too heavy, that is, too much friction. [652]

Q. At what time was this, what year, as near as you can state?

A. I suppose it was about 1937 that we started working with that.

Q. At that time these condensers, you say, that you obtained or bought for the Packard-Bell people offered too large a resistance for the purpose of push-button tuning, is that correct?

A. That is correct. Condensers available at that time were too heavy in torque.

Q. Was anything done by the Packard-Bell to improve these condensers that were bought in this manner?

A. Well, we couldn't do very much with the ones we purchased from one of the suppliers we were using at the time, that was a fixed adjustment at the factory. There were others on the market which could be adjusted by a set screw in the rear of the condenser. In that case we were able to use those condensers by readjusting them in our own factory.

Q. Did you have any condensers made to your order for the purpose of using them with the automatic tuners you had?

A. All the condensers were made to order for automatic tuners, after we had discovered that it was necessary to lighten the torque.

(Testimony of Allan R. Ellsworth.)

Q. Who made those condensers?

A. Most of them were made by American Steel Package. [653] We also purchased them from Radio Condenser Company.

Q. Did you make any specification as to the resistance to turning of these condensers that you ordered from these people?

A. By agreement there was a mark put on the back of the condenser, it was a zero. The manufacturer used the expression of zero torque for those condensers. Whether it was actually zero torque, or not, of course, is a matter that would be open to discussion. But it was as light a torque as could possibly be made and still have the plates stay in position without rotating.

Q. How much would you say—would it be less than one inch ounce, or greater?

A. That would be a point that would be open to discussion, because I don't recall the figures at the time. But I do know that it had to be as light as possible and still allow the plates to maintain their position.

The Court: You don't know what the torque measurement was, then, do you?

The Witness: I don't recall at this time. It has been too long since I have done the work, and I wouldn't want to make a guess at it. I don't have records at home of my work at that time, either.

Q. (By Mr. Flam): In the automatic tuning mechanisms that were provided in Packard-Bell

(Testimony of Allan R. Ellsworth.)

sets, was anything else [654] done to reduce the load on the push-button?

A. We had to reduce friction at all points, such as the operation of the pointer. The pointer itself came in for some redesign, we had to put a couple of little buttons on the slider, so that there would only be two points of contact instead of having contact all along the length of the slider as had previously been the case. We had to use large pulleys over which the cord ran instead of small pulleys, because of reducing the friction enough to make a difference, sufficient difference so that it would be felt on the button. We had to disconnect the manual tuning from the push-button tuning by some means in order to remove that load.

Q. Regarding the setting of the automatic tuner mechanism so that they would bring in a predetermined station, what were the trade requirements as to the facility with which these settings could be made at the time you were at Packard-Bell?

A. I don't quite understand your question.

Q. I understand that these automatic tuners have something adjustable in them to bring in a desired station, a tappet or a cam or something of that sort. Now, if that process of adjustment was difficult, would it have been commercially feasible to utilize such automatic tuners?

A. Well, if it were difficult it is hardly likely that [655] it would be acceptable, because most dealers, distributors, and so forth, wouldn't have

(Testimony of Allan R. Ellsworth.)

anything to do with a device that required a lot of service. Radio had reached the stage of merchandising at that time that most merchandisers just wanted a package to sell, they didn't want to have anything to do with it. They didn't want to adjust it or anything else. In fact, we had difficulty at first with push-button tuning because they even wanted to have the radio adjusted to the stations in their own localities, in spite of the fact that we made it very simple for them to adjust it.

Q. Was it necessary to specify the amount of pressure that could be used on the push-buttons to bring in a station, or for the setting operation?

A. Not in the tuner we used that was a Quality Hardware unit. It wasn't necessary to state anything about the pressure of adjustment.

Q. Would it be a practical matter to inform the trade or the public as to the amount of pressure that would be exerted on the push-buttons in connection with the operation of tuning or of setting the tuner to a required station?

A. Well, you would not have any way of saying how much is too much. It doesn't seem that it would be practical, because what would be too much for one person would not be too much for another. And it doesn't seem that it would be possible to make any accurate adjustment in that case. [656]

Q. What would be the instructions to the user of these push-button tuners regarding the pressure that would have to be used in the process of setting the tuner to a station?

(Testimony of Allan R. Ellsworth.)

A. Which tuners are you talking about now?

Q. Well, generally any for the present.

A. Well, at present I wouldn't know, but at the same time we were working with tuners, the Quality Hardware unit, there was no statement necessary at all as to the pressure.

Q. That is, you could use any pressure?

A. Yes. It didn't matter at all. You just pushed the button and then adjusted it, that is all there was to it. There was no statement whatever about pressure.

Mr. Flam: That is all. Cross-examine. [657]

Cross-Examination

By Mr. Lyon:

Q. Now, Mr. Ellsworth, during the period that you were using the—let me ask first, am I correct in understanding that the only automatic tuner as such that you used was the Quality and Crowe tuner?

A. Well, in the beginning that was the only kind we used—that and the electrical push button, but I think here we are only discussing the mechanical type of tuner.

Q. That is correct. I want to distinguish from the motor-driven.

A. We did use the motor-driven type.

Q. For the purpose of my question I want to narrow it down to the actual mechanical tuner involving a push button or a lever and not a motor-driven and not any electrical switch type.

(Testimony of Allan R. Ellsworth.)

A. The Quality Hardware type was the type we used in the beginning and used most of the time. I am not—in fact I know we did use other types later on, perhaps a year or two later we used other types but we found the Quality Hardware unit to be the best of all of them for our purposes.

Q. And you can't remember what other, if any, automatic tuner you used?

A. Well, we did use one made by the American Steel Package with a tape as an adjustable means.

Q. With a tape as an adjustable means?

A. Yes, a tape type of tuner. It wasn't altogether [658] satisfactory and we didn't use it very much.

Q. Aside from that tuner were there any others?

A. Well, I don't recall that there was. As I say, there has been quite a little time gone by and it has been perhaps ten years now and it is quite a long time to remember back.

Q. Then we can reasonably safely say though that according to your present memory, that aside from that tuner which you say wasn't particularly satisfactory, the only one used was the Quality type?

A. That is right.

Q. Now, when did you use that Quality type tuner?

A. As I recall, it was in 1937 when we started using it.

Q. Pardon me.

A. As I recall, it was in 1937 when we started using that tuner.

(Testimony of Allan R. Ellsworth.)

Q. And how long did you use it?

A. Well, we used them consistently up until the war, as a matter of fact.

Q. You used the Quality tuner?

A. Yes, we used it—well, it was made by Crowe Name Plate later on.

Q. Yes, we understand that, but you used it consistently until the war? [659]

A. Yes, I believe so.

Q. Now, what type receivers—let me ask it another way. During this period did you manufacture various types of receivers? A. Yes.

Q. How many various types?

A. Oh, we had as many as 30 models.

Q. Did you use the Quality tuner in all of the models? A. No.

Q. How many of them?

A. We used them only on a few models. We never used the same thing in all models.

Q. How many of the models did you use the Quality tuner in?

A. Well, I wouldn't want to answer that without referring to technical information which I don't have available. That is as to that period because it has been too much time and I just probably would make the wrong statement.

Q. Can you make an estimate as to about how many out of those 30 types that you used the Quality tuner on?

A. I can say that we used it on the smaller

(Testimony of Allan R. Ellsworth.)

models, whereas on the larger models we used the electrical push button.

Q. Was there any particular reason for the distinction? [660]

A. Well, the electrical push button type was more expensive and we could afford to use a more expensive unit in the higher-priced models.

Q. Do I deduce correctly from that that the electrical type was more satisfactory?

A. That is a matter of opinion.

Q. Well——

A. One engineer would argue with you it was better and another would argue with you it was not as good.

Q. What is your opinion?

A. Well, I don't think I had any particular opinion at the time because I was interested in making what would sell.

Q. You stated that you used the electrical type in the more expensive sets because you could use a more expensive tuner in the set. Now, I got the inference from that statement that the electrical tuner was better. Now, do you want to change that statement or was the electrical tuner better?

A. I am not interested in trying to create inferences or anything like that, but at the time we are discussing competition more or less dictated what you used. If the larger models of our competitors had electric push buttons naturally we would have electric push buttons, too. You can't make an in-

(Testimony of Allan R. Ellsworth.)

ference on that basis that the electrical [661] push button was better.

Q. You did, however, use the more expensive tuner when you could?

A. Yes, of course—now, wait a minute. I don't mean it that way—"When we could," because we used the electric push button unit on the basis of what competition demanded.

Q. What did competition demand?

A. At the time the higher priced models most competitors had electrical push buttons.

Q. Now, taking the lower priced models. Were there any considerable distinctions in the structure in the various types of those lower priced models with which you used the Quality?

A. How do you mean "distinctions"?

Q. Well, for example, in these lower priced models were there differences in pointer setup or for example, manual control—for example, were they two-gang or three-gang? Were they in those various respects—were there any outstanding differences? I am trying to save time, Mr. Ellsworth. I can take them one by one if you can recollect them, but if there are any—

A. I think that is self-evident. There was differences in receivers just as you have differences in units here, but all embodying similar devices. [662]

Q. Those differences were in mechanical structure?

A. They were to suit each designer's problem

(Testimony of Allan R. Ellsworth.)

that had to do with the cabinet, the size of the cabinet that the unit had to be put in; the sales department idea of what would be merchandisable and that sort of thing.

Q. All right. Did you use the same pointer mechanism in the various low priced units?

A. We used a similar type of pointer mechanism in most of them. I wouldn't say the same simply because you had to have different size dials for different cabinets.

Q. All right. Did the pointer unit used in each receiver have the same structural principles, mechanical principles?

A. They may have but didn't have to if you are getting at the idea that some may have been pointers and some may have been the slide type of dial because that is a matter open to choice of the individual designer.

Q. Well, I am asking you were some of them sliders and some pointers?

A. Yes, some were pointers and some were sliders.

Q. Now, were there any differences in the friction in those pointer mechanisms?

A. Well, originally we had the most success with the pointer type because we hadn't found how to overcome the friction in the slider type. Afterwards we discovered ways [663] and means of overcoming that friction and then we used more of the slider type dial.

(Testimony of Allan R. Ellsworth.)

Q. In other words, the slider type had more friction in it than the pointer type?

A. Obviously it would have because the pointer is fastened on the end of the condenser shaft and doesn't involve any friction at all—that is to move the pointer, since it is just fastened right in the end of the shaft. It was in our case in our design.

Q. Will you perhaps more completely describe the pointer mechanism that you used?

A. The variable condenser was positioned in the chassis so that the shaft would point toward the front of the cabinet. The dial was fastened onto the front of the cabinet or onto the chassis, whichever was the most convenient. The shaft would come through the dial and the pointer was the—was fastened right onto the shaft.

The push button mechanism operated the variable condenser through a pulley but so far as the friction involved in turning the pointer was concerned, there was no friction in turning the pointer.

Q. And how about the slide mechanism that you used?

A. The slide mechanism was operated by a pulley that was fastened onto the variable condenser shaft, having a cable or cord running through the pointer and back around [664] through the pulley.

Q. Now, Mr. Ellsworth, how about leaving the pointer and the slide mechanism and tell me what type of ganging you used in these various receivers?

A. Two or three-gang usually.

(Testimony of Allan R. Ellsworth.)

Q. Did you use both two and three-gang?

A. Yes.

Q. And you used the quality tuner with either the two or three-gang condenser, is that right?

A. That is correct, although we preferred the two-gang because it was a little easier to operate.

Q. When you say "easier to operate" do you mean it took less of—— A. Less torque.

Q. Of a torque? A. Less torque, yes.

Q. Now, you testified that you ordered zero torque condensers. Now, did that mean that these two-gang condensers had a total torque of zero torque?

A. Well, I don't think you could say it had a zero torque. There would be some torque of course, but it was the agreed designation between us that the condenser would be marked zero on the back, which indicated that that was the absolute minimum torque that could be supplied.

Q. Absolute minimum torque that could be supplied? [665] A. By that manufacturer.

Q. By that manufacturer. And when he marked a two-gang condenser or a three-gang condenser zero, what he meant was that the three-gang condenser was down as low as it could get?

A. That is correct.

Q. Now, in your opinion did they get these condensers down pretty low?

A. Well, they got them down to the point where they were just inside of not staying in position by themselves.

(Testimony of Allan R. Ellsworth.)

Q. In other words, considerably lower than the commercial, the ordinary commercially available condenser or condenser gangs?

A. At that time, yes.

Q. And it was on some special order that you got this type of condenser?

A. That is correct, although it became almost automatic that we got those kind in the future because they changed the torque of all condensers and the heavy condensers that we had received previous to push button tuners weren't supplied any more.

There was one designation of one above the designation of zero and it was just a little more torque, but even that condenser could have been used in the push button tuning. How much torque that was I don't know. [666]

Q. Do you mean to say that you used that condenser?

A. We didn't use that designation but that was about the only two types that were available from there on. In other words, what I am trying to say is that when push button tuning came into prominence, why, the manufacturers just automatically reduced the torque on all condensers from then on.

Q. Is it your testimony then that, for example now in the use of push button tuners the condensers used are zero or one torque?

A. Well, they are probably about that amount of torque—in that range, because it was pretty much a changeover in the condenser industry at that time.

(Testimony of Allan R. Ellsworth.)

Q. And in your opinion then you can't use, for example, three-inch ounce or three and a half-inch ounce tuners with these push button—I mean condensers with these push button tuners?

A. I would have to know what the manufacturers' designation of zero was equal to before I could say that. Maybe his designation of zero was equal to three ounce.

Q. Let us say zero is equal to about one-inch ounce—I mean an actual measurement on it.

A. If you want to be hypothetical you could arrive at most anything.

Q. Let us be hypothetical. [667]

A. I don't think that would prove anything. However, if you are trying to prove something—

Q. Well, you have testified to zero inch ounce and one-inch ounce.

A. No; I have merely testified to a designation.

Q. Designation of zero and a designation of one?

A. Yes.

Q. What did the one mean?

A. One meant more torque than the absolute minimum the manufacturer could supply and was suitable where push buttons were not used.

Q. Suitable where push buttons were not used?

A. Yes, just the two types available after the push button came into effect—that is commonly available on a production basis.

Q. I understand then the only condensers that were usable with the push button tuner after the

(Testimony of Allan R. Ellsworth.)

push button tuners began to be used, were the zero type?

A. Well, I think they were both usable if you were willing to have a little more pressure on the button.

Q. Then I won't say "usable," I will say "used."

A. By the Packard-Bell Company there was only the zero type used. I am not talking for any other manufacturer—I can't.

Q. Yes, I understand that. And the zero meant just [668] as little load as there could be and still hold the condenser plates—keep the condenser plates from falling down?

A. That is correct. I will also point out another factor which was something of a problem and was the reason why the one designation type of condenser was used, and was used by other manufacturers. As a matter of fact in push button tuning they had trouble with microphonism because of the very light adjustment and they couldn't get away with that very light torque type so they had to have a little heavier torque condenser and this one designation type was the one they used usually in that case. My memory is returning to me a little.

Q. I may have misunderstood either one or the other of your answers, but I understood the one type wasn't used by you people with the push button tuner.

A. That is correct, because we had no trouble with microphonism sufficient to make it necessary.

(Testimony of Allan R. Ellsworth.)

Q. Why didn't you have trouble?

A. Well, in the way we designed our equipment. We found means of avoiding that.

Q. Your equipment was all household equipment, was it not? A. That is correct.

Q. You didn't manufacture any automobile sets?

A. Not with push buttons. [669]

Q. Why didn't you manufacture—why didn't you put, let us say, push buttons in automobile sets?

A. As a matter of fact, we weren't manufacturing automobile radios at that time at all. I think we discontinued manufacturing automobile radios about 1936, it seems to me.

Q. Let us go back to the household sets then. What kind of manual tuning means did you use in these household sets?

A. There were several types. The most common type was the pulley on the shaft with a cord running to a separate shaft positioned in a different location.

Q. Generally speaking would that be a high or low friction type?

A. Well, it would naturally be a high friction type. If you had no trouble with microphonism either one would be practical to use—either type.

Q. Well, you stated you didn't have any trouble with microphonism. A. That is correct.

Q. Then did you use either type?

A. We could use either type.

(Testimony of Allan R. Ellsworth.)

Q. Did you use either type with your push button control?

A. No, I don't believe we would have used the other [670] unless it was absolutely necessary because of the shortage of one type. I don't recall of any occasion where we did use it or could use it.

Q. Used which? A. The heavier type.

Q. In other words you used the lighter type?

A. At all times.

Q. Then in your set—let me ask you first, are there any other points of load or friction, let us say, in one of those sets which you manufactured?

A. Well, there was the tightness of the cord running over the pulleys that had to be—couldn't be too tight or it would increase the friction. We had to be very careful in our choice of the compensating spring which adjusted the tension of the cord.

Q. Were you careful in all those instances to keep load out of the device?

A. That is correct.

Q. Then is it fair to state that in the use of this Quality tuner in every detail of your radio receiver you removed as much load as was humanly possible? A. That is correct.

Q. And that you especially designed or gave special attention to proper engineering features in avoiding microphonism so you could do [671] that?

A. That is right. Let me point out one other thing about that. You know in designing a device

(Testimony of Allan R. Ellsworth.)

for public consumption you must consider competition and the lightness of touch of a push button unit naturally would enhance the salability of the unit. That was one of the reasons for keeping that load down. In other words how much you could reduce that was a matter of the individual manufacturer's choice. It happened that the Packard-Bell—well, we followed that practice. With some of the other push button tuners on the market you could push the button and practically push the radio off the table before it would operate. That was because the designer had not considered the lightness of load all the way throughout the device. Now, there is such a thing as a radio, let us say for example an automobile radio, where it doesn't matter how hard you have to push because the unit is fastened and you can push it as hard as you like. You can't push it away from you. But a small radio sitting on a table is so light if you push it hard you would push it clear off the table.

Q. Conversely, those radios of yours that you have described wouldn't be adaptable for use in an automobile, would they?

A. I would have to study that before I could answer that question, because they weren't designed for automobile radios. Whether you are talking about radios or the devices—if you are talking about the push-button unit—

Q. I am talking about the whole finished receiver.

(Testimony of Allan R. Ellsworth.)

A. Well, it was designed for use in homes, not in automobiles. Obviously, it wouldn't be practical.

Mr. Lyon, Sr.: Have we an exhibit here, Mr. Flam, that illustrates this Quality tuner that the witness says he was using?

Mr. Flam: Yes. I was trying to find it.

Mr. Lyon, Sr.: I would like to have it identified so the court will know just what tuner he had.

The Court: What is BB there?

The Clerk: BB is the Crosley tuner, your Honor.

Mr. Flam: I think, your Honor, FF is what the plaintiff intends to use.

Q. (By Mr. Leonard Lyon, Jr.): Mr. Ellsworth, I show you Defendant's Exhibit FF, which is a tuner; how does that compare with the tuners about which you have been testifying?

A. We didn't use this identical unit, but I think that the same dies were probably used in making the buttons and [673] the same general design. That is, ours was a four-button unit, very similar to these three buttons. If you were to cut this off (indicating) right here and complete this as a four-button unit, that was essentially what we used. Although it had a shaft coming out at the end here, out of one end of it.

Q. Did the devices use a rocker or treadle bar similar to the rocker in the device Exhibit FF?

A. Yes.

Q. Did they use plungers similar to these plungers? A. Yes.

(Testimony of Allan R. Ellsworth.)

Q. Did they have similar tappets pivotly mounted on the plungers which pressed against the rocker and positioned the rocker?

A. Yes, I would say the construction of the plungers and treadle bar and the locking device were the same.

Q. In other words, in essential respects this device is pretty much the same as the devices that you used?

A. That is correct.

Mr. Lyon, Jr.: That is all.

Mr. Flam: No redirect examination.

I would like to recall Mr. Leishman to the stand:

LeROY J. LEISHMAN

called as a witness by the defendants, having been previously sworn, was examined and testified, in rebuttal, as follows:

Direct Examination

By Mr. Flam:

Q. Mr. Leishman, you have testified before in this case, haven't you?

A. Yes, I think that is obvious.

Q. I think you were asked on cross-examination whether you knew what the situation was with respect to automatic tuning on current household sets, and you said you didn't know what that was. Is that right?

A. That is correct.

Q. Then on redirect you said you had no opportunity to examine current models, is that right?

A. That is correct.

(Testimony of LeRoy J. Leishman.)

Q. Did you hear Mr. Schwarz's subsequent testimony to the effect that automatic tuning was coming into disuse in household sets and that one reason was that it was not sufficiently accurate for frequency modulation sets?

A. Yes, I heard that.

Q. Have you done anything since last Thursday to ascertain whether automatic tuning was used on household sets and whether it was used with frequency modulation sets?

A. Yes, I have. [675]

Q. What did you do?

A. I went to various radio stores to ascertain what was on the market, and in what type of sets tuning was used. I went first to a radio store on Broadway, I think it was at 2nd and Broadway, and they didn't have any sets containing automatic tuning. I then went to 7th Street, I went to Schirmer & Company's place of business, and I found that they had automatic tuning on various models, and there was mechanical push-button tuning on Magnovox radios carried by them, and also on Stromberg-Carlson radio sets carried by them. Then I went just a few doors west to the Birkel-Richardson Music Company, and I found that they carried the Stromberg-Carlson line, which as I have already mentioned included mechanical tuning. I went also to Barker Brothers and found that they had radio sets with automatic tuning, and the Hallicrafter set had mechanical automatic tuning. They told me that they also carried——

(Testimony of LeRoy J. Leishman.)

Mr. Lyon: I object to what they told the witness.

The Court: Yes.

A. (Continuing.) I went to the May Company and found in their place of business Stromberg-Carlson receivers with the same automatic tuning to which I have testified. And I went to the Leo J. Myberg Company at the suggestion of the clerk at Barker Brothers to see the RCA line, and I found there on the higher-priced models, the Crestwood line of RCA, [676] that they used mechanical automatic tuning. I saw the tuners in all of these sets using mechanical automatic tuning, and I found that all of them were of the coaxial rocker and tappet type that we have discussed here at the trial, and I found that in the case of the Stromberg-Carlson receiver, the RCA receivers, and the Halli-crafter receivers, that they all used the automatic tuning for frequency modulation, as well as for amplitude modulation, and in advertising matter which I have here it will be observed that they advertised the automatic tuning as used on both types.

Q. Before you produce that advertising matter I would like to ask you one further question: Did you find any mechanically-tuned household sets of any kind which did not use the coaxial tappet and rocker system of tuning?

A. None whatever.

Q. Go ahead with your advertisements.

A. I have here the photographs from the service

(Testimony of LeRoy J. Leishman.)

manual of the Hallicrafter set. I was not able to procure the actual manual because the one that I saw was the only one that the service——

Mr. Lyon: We don't need all that, Mr. Leishman.

Mr. Flam: If there is no objection by opposing counsel, regarding the introduction of these photostats in lieu of the original, we can go right ahead.

Mr. Lyon: I am not interested in holding you to produce [677] the originals if you have photostatic copies. We would like prints, if you have them.

The Witness: Here are the negative prints. These positive prints were made from that negative, I assume.

Q. (By Mr. Flam): What about that manual you were discussing as having pertinence in connection with automatic tuning?

A. On the Hallicrafter set they have two push-button tuners, one on one side of the set for amplitude modulation—I might say that is the type used by the ordinary broadcasting stations, and some other stations in the short wave field use frequency modulation, which is considered to have higher fidelity and to be freer from static; and on the opposite side of the receiver there is a gang of buttons for frequency modulation. The automatic tuner for amplitude modulation has a larger number of leaves in the condenser, and those for frequency modulation are of the same type using fewer leaves, because that is the type of condenser

(Testimony of LeRoy J. Leishman.)

used for higher frequencies. Frequency modulation takes place in higher frequencies. Then these folders show the buttons used.

Mr. Lyon: Never mind telling us what the folders show.

The Witness: Shall I go on with the others?

Mr. Flam: Just a minute.

The Witness: I have checked on the folders, made checks [678] beside the pertinent parts of the various figures.

Q. (By Mr. Flam): You say both of these sheets are from the instruction book or service manual of the Hallicrafter set?

A. That is correct.

Mr. Flam: I offer these sheets in evidence, your Honor.

The Court: They will be received.

The Clerk: Defendant's Exhibit NNN in evidence.

(The documents referred to were marked Defendant's Exhibit NNN, and were received in evidence.)

Q. (By Mr. Flam): Do you have any other advertisement or documents showing the use of automatic tuners of this type?

A. I have actual circulars showing RCA receivers in the Crestwood series, and containing information as to the automatic tuning device which, as I have stated, is used for frequency modulation, as well as amplitude modulation. I made checks beside the pertinent information in these folders.

(Testimony of LeRoy J. Leishman.)

Q. Do you have copies of these for opposing counsel?

A. Those were all I was able to get. In fact, I think in one case——

Mr. Lyon: Have you got copies of them?

The Witness: No, I haven't made any copies of them. I thought that since I had the originals that I wouldn't need to make copies. [679]

Mr. Flam: I offer the three sheets in evidence relating to the RCA household sets.

The Witness: The——

The Court: Don't volunteer anything. They will be received.

The Clerk: Defendant's Exhibit OOO in evidence.

(The documents referred to were marked Defendant's Exhibit OOO, and were received in evidence.)

Q. (By Mr. Flam): You say you saw the tuner devices of these radio sets that you have testified about? A. That is correct.

Q. Have you anything further in connection with push-button tuning that you would like to show?

A. I have other folders here regarding other sets that I saw. I have a folder here regarding the Magnavox receivers, the inside of the back cover mentions the push-button tuners, and I made a check by the pertinent information.

Mr. Flam: I offer the pamphlet in evidence.

(Testimony of LeRoy J. Leishman.)

The Court: It will be received.

The Clerk: Defendant's Exhibit PPP in evidence.

(The pamphlet referred to was marked Defendant's Exhibit PPP, and was received in evidence.)

Q. (By Mr. Flam): Do you have anything further?

A. I have another original folder on the Stromberg-Carlson sets, and I have made check marks beside the pertinent [680] information regarding the models containing push-button tuning.

Q. And those are the push-button tuning devices that you saw in the Stromberg-Carlson set?

A. That is correct.

Mr. Flam: I offer the circular in evidence.

The Court: It will be received.

The Clerk: Defendant's Exhibit QQQ in evidence.

(The circular referred to was marked Defendant's Exhibit QQQ, and was received in evidence.)

Q. (By Mr. Flam): Can you state what other sets in the past have used the coaxial tappets and rockers of the type we have been talking about here?

Mr. Lyon: I object to that as not rebuttal, your Honor.

The Court: We have been over that before, I think. Objection sustained.

(Testimony of LeRoy J. Leishman.)

Mr. Flam: I think, your Honor, that on direct the testimony was to the effect of tuners used immediately after the Leishman patent was issued, and I don't think there is any evidence offered to the extent of the use between that time and the present. The plaintiff has offered evidence through Mr. Schwarz that this particular type of device is going very much into discard. We want to tie up the period right after the Leishman patent issued to the present, as to the sets that have used this particular method of tuning. [681]

The Court: Well, there may be some phase of it that is rebuttal, but the question is too all-inclusive. There is some evidence in the record by Mr. Leishman as to the use of instrumentalities of the type that you have just now described, and there is also testimony on behalf of the plaintiff in opposition to it. I am not going over that thing again, because it wouldn't make it any stronger if it was stated twice than if it was stated once and credibly stated once.

You might look over the transcript during the noon hour and see if you can't get your questions in shape so that you can rebut the phase that you think there isn't any evidence by him on the case in chief. I think there is a good deal of it, myself. 2:00 o'clock, gentlemen.

(Whereupon, at 12:05 o'clock p.m. a recess was taken until 2:00 o'clock p.m. of the same day.) [682]

Los Angeles, California

Thursday, June 3, 1948, 2:00 P.M.

The Court: You may proceed, gentlemen.

Mr. Flam: Mr. Leishman, will you take the stand?

LeROY J. LEISHMAN

called as a witness by and on behalf of the defendant, having been first duly sworn, was recalled and testified further in rebuttal as follows:

Direct Examination
(Rebuttal Continued)

By Mr. Flam:

Q. I want to call your attention to the testimony of Mr. Schwarz given on Wednesday, June 2nd, relating to the use of automatic mechanical tuners in household radio sets at page 384 of the record. The question was asked:

“Can you testify, based on your own knowledge in the industry and this Zenith tuner like Exhibit H, why tuners of that type did not continue in use in household radios?”

“A. Yes, I think I can.

“Q. Will you please do so?

“A. A restraining reason was first the problem in superheterodynes to produce them in mass production. I had in mind spurious responses, things that have nothing to do with the mechanical positioning of shafts, but have to do with producing superheterodynes in the first place. So we had problems like [683] spurious responses, we had

(Testimony of LeRoy J. Leishman.)

problems such as electrical drifts with temperature and humidity, in other words, you tune the radio set, and as the set heated up or after you tuned it it would change to a new position, either due to humidity or temperature, or slight mechanical shock. We had problems of electrically tracking circuits, and that was one restraining reason why no mechanical tuner was considered except for custom-built and higher priced radios.”

And then he goes on to say:

“The second reason that was advanced to us in the engineering department by sales and management, and we came to the same conclusion, was that if we were going to go to the expense of automatic tuning we should first consider the possibility in household sets of providing remote tuning, and remote tuning just about calls for electric tuning of some kind, and that is why electric tuners first appeared and remote tuners appeared in the higher priced models.

“Then the third reason was that it was considered not too important in household to have a tuner which could have the settings changed, because once a set was used in a given locality the settings could be made, and it wasn't too important to change them to new stations. The RCA, Philco, and Zenith, [684] the three largest manufacturers of household radios, made most of their radios with switch type tuners which were not easily adjusted. They could be set up by the service man

(Testimony of LeRoy J. Leishman.)

when installing the set, and they would remain in that position for considerable lengths of time.

“The fourth reason advanced was that push button tuning was of maximum use in an automobile, so that the driver need not divert his attention from the road and could reach over and press a button and bring in a favorite station. But in a household radio if he had to go to the radio set in the first place and tune it, it was almost as easy, they thought, to turn a knob as to push a button. The value of push button tuning was less.”

Now, is it true that mechanical automatic tuners for household sets did not continue in use after the Zenith-Schaefer tuner was discontinued?

A. No.

Mr. Lyon: I think Mr. Schwarz testified that it didn't continue at all.

The Court: Counsel has a right to propound his question. You can argue the matter in your briefs later on. Answer the question.

The Witness: It didn't continue immediately but it [685] came back into use.

Q. (By Mr. Flam): Was the coaxial rocker and tappet type of tuner used after the Zenith tuner was discontinued? A. Yes, it was.

Q. And in what sets were they used?

A. You mean household sets?

Q. Yes, household sets.

Mr. Lyon: Now, I object to that on the ground it is not rebuttal. He testified to that on his case in chief.

(Testimony of LeRoy J. Leishman.)

Mr. Flam: As I remember it, your Honor, we tried to have Mr. Leishman testify as to the volume and not the matter of sets—the volume of tuners.

The Court: Objection overruled.

The Witness: They were used in Crosley sets manufactured by the Crosley Corporation; Spartan sets manufactured by Sparks-Withington. Emerson sets. These are all household sets, of course. Emerson sets, manufactured by the Emerson Radio Corporation. Packard-Bell sets manufactured by Packard-Bell here in town. Mission-Bell also of Los Angeles. Gilfillan Brothers, Incorporated of Los Angeles. The sets made by Radio Corporation of America. The Traveler. I am not familiar with the exact corporate name. Silvertone sets made for Sears-Roebuck by the Colonial Radio Corporation. Arvin radios made by Noblett-Sparks. Admiral radios made by Continental Radio, and [686] Television Corporation. Magnavox radios. Stromberg-Carlson; Hallicrafter. The Detrola set; sets made by the Clinton Manufacturing Company of Chicago. Sets made by the Warwick Manufacturing Company of Chicago.

Sets made by Stewart-Warner of Chicago. Sets made by the Westinghouse—these were Westinghouse sets. I am not sure of the name of the company. Dewald Radios and Troy Radios.

Q. (By Mr. Flam): Now in your earlier experiments with automatic tuning did you use condensers for that purpose? A. Yes.

(Testimony of LeRoy J. Leishman.)

Q. Did you use the regular available condensers on the market?

A. Well, I used the regular available condensers but not as they were available.

Q. How did you have to change them?

A. It was necessary on any automatic tuner to keep the pressure on the buttons as low as possible, so I reduced the torque or the force required to move the condensers by means of a set screw on one end of the condenser and then also I removed a spring that many of the condensers have—many of the condensers provide a leaf spring to provide a certain amount of tension and an electrical contact with the rotor. I took these leaves off and reduced the tension of [687] the spring and then replaced the tension of the spring on the condensers.

Q. Do you know what other manufacturers did about the torque or restraining force of the condensers when automatic tuners first appeared?

Mr. Lyon: That just calls for a yes or no answer.

The Witness: Yes.

Q. (By Mr. Flam): What did they do?

Mr. Lyon, Sr.: I object to that until a foundation is laid as to how he knows.

The Court: Yes.

Q. (By 'Mr. Flam): How do you know what these manufacturers did?

A. I know in two ways. From information they gave me which perhaps would be classified as hear-

(Testimony of LeRoy J. Leishman.)

say, but I examined the condensers in the sets and found that they were of the so-called zero torque.

Mr. Lyon, Sr.: Just a moment. I would like to know what sets and at what time.

Q. (By Mr. Flam): Do you know what sets you examined and where?

A. I examined Packard-Bell sets, Mission-Bell sets, Crosley sets, and the sets made by the Belmont Radio Corporation of Chicago.

Q. And as a result of that examination can you state [688] what the manufacturers did in connection with the torque of the condensers?

Mr. Lyon, Sr.: I don't see how looking at the set you can tell what the manufacturers did. He can state what he found in the set that he examined.

Q. (By Mr. Flam): I will re-phrase the question. What did you find in these sets that you examined?

A. I found that the sets were a very low torque. It took very little pressure to move the condensers.

Q. Do you know of any manufacturers who used such condensers in automatic tuning in automobile tuning sets? A. Crosley Corporation.

Q. Any others?

A. I can't be sure of that.

Q. And what about the household sets?

Mr. Lyon: I object to that. That has been fully covered.

The Court: You have been over that.

Q. (By Mr. Flam): Do you have any way of

(Testimony of LeRoy J. Leishman.)

comparing the force that must be exerted to turn a condenser or other tuning device?

A. I have a device for testing tension in ounces and fractions of ounces.

Q. You mean forces like a spring balance except that you compress the spring and read the force on the barrel? [689]

I think this is a rather well known weight measuring or force measuring instrument.

The Court: I don't know whether it measures torque or not.

Mr. Flam: It measures force and I think I can get the witness to state how he uses it. [690]

Mr. Flam: As far as the accuracy of this instrument is concerned, we are going to use it primarily for comparing the readings of the force required to move these condensers rather than necessarily micrometer measurements of values.

The Court: Of course, anything that is comparable would assist. I don't know, I am frank to say, whether an instrument that measures force, per se, is capable of measuring with precision the torque. It is not necessarily force applied directly, but it is a twisting.

Mr. Flam: Your Honor is absolutely correct, the torque can be expressed as a resistance against turning. If, however, we apply a certain force at the same distance from the center, then a measure of the force is a measure of the turning resistance.

Of course, the longer you make your lever the

(Testimony of LeRoy J. Leishman.)

easier it is. You could move the world if you had a lever long enough.

The Court: I don't know what the witness would say. Possibly these gentlemen can do it. I am satisfied I can't do it.

Mr. Lyon: The testimony has been in inch ounces, and I wonder if the witness in using his spring device could use it in conjunction with this balance here so that he could read the readings in inch ounces.

Mr. Flam: The difficulty with using an instrument of [691] this character is that you just about have to dismantle the whole set. I think I can go about this in another way.

Q. (By Mr. Flam): I will ask the witness first of all what factors enter into the amount of force that you use to push buttons for tuning a radio set.

A. The factors that enter into the force required to depress a button on a radio set, for an automatic tuner, I assume you mean, are five. There are five different factors.

First, you must rotate the condenser, if it is the condenser type; or if it is the permeability type, you must move the cores in and out of the coils.

Second, if the condenser is coupled by gearing or string with the treadle bar, you must overcome the friction in the coupling means.

Third, if the manual drive is coupled with the tuner proper, by which I mean the condenser or the permeability tuner, you must drive that manual knob.

(Testimony of LeRoy J. Leishman.)

And then a fifth item is the force required to drive the dial.

I may have these numbered wrong. But another item is the force required to drive the dial. And still another item that enters into it is the spring that returns the button to its rest position. You must overcome the tension of that spring.

So all of these factors enter into the amount of pressure [692] required on a button in a push-button tuner.

With respect to the condenser, I think that is of some importance to notice just in what way the resistance to turning of the condenser, or as it is generally termed in the radio industry, the torque of the condenser—this term is used rather loosely, they sometimes speak of the pressure on the button as the torque—of course, torque actually is the resistance to turning on the part of any rotatable member, but it is used rather loosely in the automatic tuning art. If a condenser must rotate through 180 degrees, and if pressure were to be applied one inch from the axis of rotation of the turning shaft, and if that pressure is to rotate the rotary blades of the condenser through a semicircle or 180 degrees, as was the case with most of the early automatic tuners, then it is necessary to apply that force through a distance equal to two inches, which would be the diameter of the circle having a one-inch radius, times pi, and then divided by 2, that would give the total periphery, or the total distance through which

(Testimony of LeRoy J. Leishman.)

a point one inch from the axis of rotation would move, and that will be slightly in excess of three inches.

Now, if the button were to move a half inch, if the button were to do nothing else but move the condenser, the movement of the button would only be $1/6$ of the total movement of the force on the condenser blades if the condenser [693] blades were to turn through an arc of 180 degrees. So if we had, say two ounces, if it took two ounces to move the condenser blades, two ounces applied one inch from the center, it would take 12 ounces on the button. That is worked out in inch ounces. However, in automatic tuning the button usually moves about $5/8$ of an inch. So whatever pressure is required one inch from the center to turn a condenser would require about 5 times that much pressure on the button, for no other purpose than to move the condenser. But then there are a good many other factors as we have mentioned, too.

Q. How do you propose to proceed to make a comparison of the resisting torque of the various models that have been introduced in evidence? I speak specifically of many of the General Motors models, as well as Model Exhibit 11. Can you explain to the court how you propose to make the comparison measurements?

A. I propose to make measurements by pressing on the condenser at a point as near as we can meas-

(Testimony of LeRoy J. Leishman.)

ure or approximate one inch from the center of rotation. I think, so that this will be as intelligible as possible, that we should begin with some condensers or tuners that have as little as possible connected to them, and then we can see how the force builds up when additional things are added.

Mr. Lyon: Your Honor, is it necessary to take all this [694] time?

The Court: Let's take one. We won't take more than one.

Q. (By Mr. Flam): Here is Exhibit 7. Can you make the measurement that you are talking about?

Mr. Lyon: I don't see how you can measure the condenser torque on that. It hasn't got a condenser on it.

The Witness: This isn't a condenser torque; this is just the torque required to move this.

This has no rotating knob on it that requires any large number of revolutions, so the tuning knob on this device, Plaintiff's Exhibit 7, the manual knob, adds no torque to it. But there is a coupling, of course, between the permeability tuners and the treadle bar, and this force is applied to the treadle bar at a distance approximately one inch from the center. The force will be pressed against the rotatable member through the linkage about one inch from the center. Now, in using this device it is necessary to observe how high the pointer moves when the motion begins to take place.

Q. Hold it as straight as possible.

(Testimony of LeRoy J. Leishman.)

A. It is a pretty difficult thing to hold that straight. It is hard to observe both. It is moving already. That position on the scale is about one ounce. One ounce is all that is required to move that. With this type of tuning, of course, not so much pressure is required because it takes [695] only a small amount of movement to drive the whole tuning mechanism. These cores move in and out approximately one inch. I think it is a little less than one inch. They protrude about $15/16$, and they go in all the way but about $1/16$, so there is about $7/8$ movement.

Q. Will you make the same type of measurement on Plaintiff's Exhibit 6?

A. On this device in the condition in which we find it now the cord to the dial has been disconnected, but when you press on the button the pressure is released that moves the cores in and out. There is a brake on model 6 which normally keeps the device from moving. That, I assume, is to keep jars from throwing the set out of tune. As soon as you press on the button so that the automatic tuner will operate that brake is removed. But it will be noticed when the cores are moved in and out the manual knob rotates around, so that additional factor of load is added on this tuner, and the tuner otherwise is substantially the same, so far as the permeability tuner is concerned, as the arrangement on Plaintiff's Exhibit 7.

This, of course, will require higher torque. I have got the job now of holding a button down——

(Testimony of LeRoy J. Leishman.)

Mr. Lyon: I will hold it down. Which one?

The Witness: Any one. Just hold the button down a little way, and don't engage the rocker. Now, we will see [696] if we can make this move. (Demonstrating.) There, it started to move. That was between two and three ounces.

Now I would like to apply that test to——

Mr. Lyon: How far out from the center was that last?

The Witness: Yes, we should have that information.

Mr. Flam: I thought you said it was the same as the other. That is why I didn't ask it.

The Witness: I don't mean that that was the same.

Mr. Flam: Measure the distance, then.

The Witness: Yes, we should measure the distance. That is substantially an inch to—where this rod moves back and forth where we applied the pressure is substantially an inch from the axis of rotation of the rocker.

Q. (By Mr. Flam): Will you make the same type of measurements on Defendant's Exhibit LL?

A. On this tuner we have a gear between the tuner proper and the manual drive, which adds considerable force to the turning moment, but we have got to drive that. This is going to be a little difficult to find a place exactly one inch from the center, but it appears that if we press right in the middle of the brass plates on Defendant's Exhibit LL, that

(Testimony of LeRoy J. Leishman.)

we will have a place about one inch from the center. I am going to try and apply this at right angles to the condenser. (Demonstrating.) It is hard to hold this out steady. [697]

Mr. Schwarz: May I help you hold it?

The Witness: Yes, please. It is hard to see when it moves. There. I wasn't able to observe the reading at the time it moved on the scale. I took my eyes away. Maybe I can feel it move this time and I will keep my eye on the scale. (Demonstrating.) About three ounces. That would be three inch ounces, providing the scale is accurate. But we are using the same scale on all these models, so any inaccuracies will automatically cancel out.

Q. (By Mr. Flam): Make the same measurement on this exhibit, Defendant's Exhibit HH.

A. I would like to mention, of course, that we were driving the gears connected to a rotating knob when that torque was measured.

This device is Defendant's Exhibit HH, and it contains the condenser——

Mr. Lyon: I think that is all in the record. All you have to do is measure it.

The Court: It is apparent it has a condenser in it.

The Witness: The condenser and the rocker of the treadle bar and the gearing connection between the rocker and the condenser. To get a place one inch from the center on this device we will have to press right out at the edge of the blades, so this reading, since we can't get right at the edge of the

(Testimony of LeRoy J. Leishman.)

blades will be slightly high, because—— [698] let's turn it straight up and I think we can observe it better. (Demonstrating.) That is two ounces. We are turning all that connected mechanism in Defendant's Exhibit HH.

Q. (By Mr. Flam): I hand you Defendant's Exhibit BB, a Crosley tuner; can you make the same measurement with that?

A. This is the Crosley tuner Defendant's Exhibit BB, and connected in this device we have the condenser, the rocker or treadle bar, as it has sometimes been referred to because it moves like the treadle of a sewing machine, and of course the gears connecting the two. There is something that is rubbing here. The rocker seems to touch the desk. Maybe we can put it in this position and it will be all right. Yes, that's free. Now we are going to be pressing down, and we will have to get the scale in a different position for a zero reading to start with.

Q. (By Mr. Flam): Are you an inch from the center of that condenser?

A. I haven't measured that yet. We are a little less than an inch; we are about 15/16 from the center of this device.

Q. To the outer edge of the plate?

A. Yes, the furthest point out where we can apply this. [699]

I wonder if we can put it up here so that all of us can see it better. (Demonstrating.) That was about one ounce. I think there is something the matter with that reading. That must be more than

(Testimony of LeRoy J. Leishman.)

an ounce. I don't want to take any unfair advantage here. Let me see if there is any other factor entering into this. I don't see, offhand, how there could be. (Demonstrating.) It is between one and two ounces, about an ounce and a half.

Mr. Lyon: Haven't we measured enough of these?

Mr. Flam: Just two more.

Mr. Lyon: I don't understand what they contend for these measurements. We have a lot of measurements here. What do you contend? Are you disputing something that Mr. Schwarz or confirming it?

Mr. Flam: Of course, our contention has been that all of these commercial type of push-button tuners must have a very low—must employ condensers or permeability tuners that will require very little force to move them, as such, so that they would be practical. That is borne out by these measurements.

It will also be pointed out that the exhibit offered for your Honor's information as an exemplar of the device in suit doesn't fall in line with these other devices, and that this Exhibit 5 is not a proper representation of what an automatic tuner should be. [700]

Mr. Lyon: Of course, your Honor, there is nothing in the patent in suit about——

The Court: That is a pure matter of argument by both sides. I think the experiment here has in-

(Testimony of LeRoy J. Leishman.)

licated, through the use of this measuring device or tool, whatever it is, approximately, not precisely, but approximately what the findings were in each experiment. Now, the effect of that as applied to the patent in suit is a matter of argument. [701]

Mr. Flam: That may be, but we would like to have figures comparing the force required to move the condensers in these various models. There is only one other, I believe.

The Court: If there is only one other you may proceed.

Q. (By Mr. Flam): I am handing you Exhibit X. A. Defendant's Exhibit XX.

Mr. Lyon: I don't think we need to describe these models again. He can just make the measurement.

The Witness: It is important to, it seems to me, to show what is being turned because if we don't have some basis as to what is being turned it is hardly a fair comparison.

The Court: Exhibit XX is a copy of the patent application.

Mr. Flam: No, this is Exhibit X.

The Court: A single X?

Mr. Flam: Yes.

The Court: The witness called it XX.

The Witness: Pardon me. It is X. There is one X right above the other. This tuner has a string drive between the condensers and the rotatable part of the automatic tuner and it also has a dial con-

(Testimony of LeRoy J. Leishman.)

nected and the force can be applied about $\frac{7}{8}$ ths of an inch from the center, so this reading will be a little higher than it would be if we were [702] to place it out an inch away from the center. That is moving with slightly over one ounce of pressure.

Q. (By Mr. Flam): Now, can you take Exhibit 5 purporting to be an exemplar of the disclosures or patent in suit and apply the measurement to it?

A. Yes. One of the condensers, I might say, on this device turns quite easily and possibly within these limits. The other one is much harder to turn. On this condenser if we apply the pressure right at the edge of the little plastic strip it will be about an inch from the center. This is the easy running condenser—the easiest of the two and it is less than an ounce. This other condenser which is connected through gearing to the treadle bar, this would be applied about $\frac{7}{8}$ ths from the center—as far out as we can place it so the pressure would actually be slightly less if we had it out one inch. It takes about four ounces on that just to move the condenser and the treadle as compared between one and two ounces on some of the other devices.

Mr. Lyon: If you converted that to one inch what would it amount to?

The Witness: We were measuring it one inch.

Mr. Lyon: I thought you were measuring it $\frac{7}{8}$ ths inch out.

Mr. Flam: $\frac{7}{8}$ ths is what you said. [703]

The Witness: It would be $\frac{7}{8}$ ths of that pressure.

(Testimony of LeRoy J. Leishman.)

Mr. Flam: It is a matter of arithmetic, isn't it?

The Witness: It would be about three and a half ounces.

Q. (By Mr Flam): Will you compare the locking arrangement on Exhibit 5 with the locking—I mean the locking arrangement for the tappet, compare that locking arrangement in Exhibit 5 with the locking arrangement described in your patent in suit, Exhibit A?

A. I haven't a copy of the patent here, incidentally.

Q. Just a minute. I will hand you one.

A. On this device I notice that the clamp is arcuate in form.

Q. You mean the part of the clamp that engages the——

A. ——is arcuate in form on the bottom and engages the collar of the tappet? While on the patent it is shown to have a V-shape. It will be noted that parts of this figure are shown in dotted lines. Of course, it is customary in any mechanical drawing to have portions that are hidden shown in broken or dotted lines. The tappet is shown in a circle which is concentric, of course, with the center, and it will be noted at the top that the lines of the circle continue an additional line extending upwards to the figure 68 at the top on the right, and there is another additional line at the left which comes up to a point. They are the portions [704] of the dotted line—two dotted lines forming the V-shaped

(Testimony of LeRoy J. Leishman.)

part of the bottom of the lock. That makes considerable difference in the operation of the lock as can be shown by a lock on one of the other exhibits in which the V-shape is followed.

Q. You mean Exhibit M?

A. Exhibit M, yes.

Q. Will you compare the amount of restraint of the two models?

A. We can lock them both up and we may be able to determine the force required to turn them—the tappets, when we have them as tight as we can get them with our fingers. I don't know whether we can measure that or not.

Mr. Lyon: I don't think we ought to be experimenting. The witness seems to agree with Mr. Schwarz that the V-notch makes a substantial difference. I don't think it makes any difference in the case to measure just how much or to take the time of the court to find out whether you can measure it or not.

Q. (By Mr. Flam): Can you make a demonstration there in the difference of the clamping effect? That is all we want.

A. The force required to turn the tappet on Defendant's Exhibit M is so great that these devices wouldn't possibly measure it. I think that if someone in comparing these were [705] to try manually to turn one with his fingers and make the same test with the other it would be obvious there is tremendous difference in this respect. And then did

(Testimony of LeRoy J. Leishman.)

you ask me for any other comparison with the patent?

Q. Well, in what other ways does this exhibit 5, Plaintiff's Exhibit 5, vary from the disclosures in the patent?

A. In Figure 2 of the patent the tappet, 61, the axis of the tappet 61 is, or, we will say the pivot on which the axis 61 is mounted, is coaxial with the axis of the rocker, 48, on page 2.

Mr. Lyon: I don't think it is necessary to read the patent.

The Witness: He asked me to compare it with the disclosure of the patent so I wanted to show what the disclosure of the patent was and where the disclosure takes place.

The Court: You can make the comparison without reading from the patent, can't you?

The Witness: Well, it states in the patent that this coaxial relationship must prevail. That is on page 2 in the first column.

Mr. Lyon: I don't see anything that says it must prevail, your Honor.

The Witness: It says it is coaxial. [706]

Mr. Lyon: It is not important whether it prevails. I think he is reading something into the patent.

Mr. Flam: And I think the document will speak for itself. I will leave that for the briefs. No need arguing it now.

The Court: All of this is argument, really, ex-

(Testimony of LeRoy J. Leishman.)

cept the comparison of the models and the explanation of what difference, if any, there appears to be between the models, and also the question as to whether Exhibit 5 is a true replica or true representation of the patent in suit. But the rest is a matter of argument, it seems to me.

Mr. Flam: I think that is so.

The Court: And I am not going to take argument from the witness stand at all.

Q. (By Mr. Flam): Did you find any variation—I notice you were making some measurements.

A. I noticed considerable variation on a previous inspection of this model yesterday, but it appears some of the parts are more or less loose and I am not able to show the variation that I noticed on this yesterday.

The Court: That is Exhibit 5.

The Witness: Yes, on Exhibit 5. I noticed that there was quite a variation from coaxiality when I measured it yesterday. I measured the distance from one side of the tappet to the rocker and the other side, and the variation I [707] noticed yesterday—there is a variation but it is not as pronounced as it seemed to be yesterday.

Mr. Lyon: If you tightened this up would you say that this Exhibit 5, as you now have it before you, is not substantially coaxial within the meaning of your patent?

The Witness: It didn't seem to be when I measured it yesterday but since there seems to be some

(Testimony of LeRoy J. Leishman.)

variation in this for some reason or other I don't think I should make a statement about that. As I measure it right at this moment I would say that it was substantially coaxial. There is slightly more room on one side than the other, but it is not enough, as I measure it now, to be material. I made the same measurements with these calipers yesterday and found a variation, considerable variation.

Mr. Flam: If your Honor please, I would like to ask this witness one or two questions which relate to a tying-in of some of the exhibits that have been before the court in Oklahoma City and which are present here in the form of physical exhibits.

On Finding 17 of the Oklahoma court reference is made to Plaintiff's Exhibit 40 and Exhibit 42. Now, those exhibits are, I believe, substantially the same as two of the exhibits already in this case and I want to ask the witness merely to identify them so that your Honor may know what that finding relates to in the Oklahoma case. [708]

Mr. Lyon: You can tell us, Mr. Flam. You were the attorney in that case. I will take your word for it.

Mr. Flam: Exhibit EE in this case is the same Exhibit 40 in the Oklahoma case, and Exhibit HH in this case is the same as Exhibit 42 in the Oklahoma case.

The Clerk: It is not Exhibit HH.

Mr. Flam: What is Exhibit HH?

Mr. Lyon: It is this thing right here.

(Testimony of LeRoy J. Leishman.)

Mr. Flam: Do you have Exhibit HH in front of you?

The Witness: No.

Mr. Flam: Have you Exhibit EE there?

The Clerk: That is a drawing of a plunger mechanism.

Mr. Flam: The drawing is EE and corresponds to Exhibit 40 in the Oklahoma case.

Mr. Lyon: Which was a physical exhibit or a drawing?

Mr. Flam: It was a physical exhibit.

Mr. Lyon: I am willing to take Mr. Flam's statement for that unless his client wants to contradict him and then I would like to hear what his client has to say.

Mr. Flam: And physical exhibit LL in this case shows the same tuner mechanism as Exhibit 42 in the Oklahoma case.

The Court: It seems to be already covered by the transcript on page 174. That is at least one of them is covered at that page. We are just going over it again. It is more specifically identified there. [709]

Mr. Flam: You may cross-examine.

Cross-Examination

By Mr. Lyon, Sr.:

Q. Mr. Leishman, referring to the Hallicrafter set which you referred to in your direct examination as having push buttons, do you know whether or not that was equipped with A.F.C.?

(Testimony of LeRoy J. Leishman.)

A. No, I do not.

Q. As a matter of fact, the only radios that you found equipped with automatic tuners on this inspection you made in the last few days, were the high priced sets, were they not?

A. I think in general that is true, but I am not sure of the price of the Hallicrafter. It wasn't a very large set. Whether it was a high priced set I don't know, but that is true of all the others.

Q. Did you find any set, any radio set selling for less than \$100.00 on this inspection that had automatic tuning on them?

A. Not that I remember—not that I recall.

Q. You did find in these various stores that you went to see a large number of different types and models and makes of household radios that did not have automatic tuning on them, did you not?

A. That is correct. [710]

Q. This first store that you went to see on Broadway, you said you didn't find any radios there with automatic tuning. What radios did you find there without automatic tuning?

A. Well, they had quite a few sets. They looked like they were second-hand sets but I am not sure about that.

Q. What sets did you see?

A. I don't remember the names of any of them. I inquired if they had any and they said they didn't and I checked on the clerk's statement by looking around the store and I probably wasn't in the store over three or four minutes.

(Testimony of LeRoy J. Leishman.)

Q. Now, when you went over to Barker Brothers and found this—no, when you went down to Mybergs and found this Crestwood series of RCA—that is the most expensive RCA series, is it not?

A. Yes. They told me that was the best set they had.

Q. And about how much does one of those sell for?

A. I don't know but they told me they were their highest price and best models.

Q. And there were many other models of RCA sets there, were there not? Cheaper sets?

A. Yes. Of course "many" is a very indefinite term. I will say there were more without automatic tuning than there [711] were with it.

Q. You found that was very much the case as a result of your entire inspection in the last few days, was it not, that there are a great many more household sets now sold without automatic tuning than with automatic tuning?

A. Yes, that is correct.

Q. You stated that you have known of a Crosley model with automatic tuning, in your direct examination. Do you mean to say that all Crosley models had automatic tuners?

A. I think that on the line that they put out in 1938 and 1939 almost their entire line did. I can't state definitely that their entire line did, but they had them on very low priced receivers.

Q. For how long?

(Testimony of LeRoy J. Leishman.)

A. Two years at my knowledge—for two years' of my knowledge.

Q. You haven't any knowledge of whether Crosley has automatic tuning on their models since 1940?

A. No. I am not familiar at all with any Crosley set manufactured since then. I don't think I have seen one.

Q. Can you answer the same question as to Sparton?

A. Yes. I am not familiar with what they have done since 1940.

Q. Emerson?

A. Let me qualify those answers. I am not familiar [712] with what any of them have done since the—I will not say any of them, but when I am answering your specific questions here my answers will be as to what I know about their lines since the manufacture of radios was stopped by Federal order in April of 1942.

Q. And you don't know anything about any of these sets since that time?

A. Excepting those that I testified as having seen on a survey that I made during the last few days.

Q. So when you testified to this long list of household models that you knew of as having automatic tuning on them your testimony related to knowledge of those sets prior to this date in 1942 that you specify?

A. That is correct.

(Testimony of LeRoy J. Leishman.)

Q. In all cases of those different makes did you mean to say that the entire line was equipped with automatic tuning or just some models?

A. Just certain sets in their line that those manufacturers made. They had sets in their line that included automatic tuning.

Q. But they also made other models in their line that did not have automatic tuning, is that correct?

A. That is correct. In some cases models—most models either had automatic tuning and in other cases the majority didn't.

Mr. Lyon: I think that is all, your Honor. [713]

* * *

CERTIFICATE

I hereby certify that I am a duly appointed, qualified and acting official court reporter of the United States District Court for the Southern District of California.

I further certify that the foregoing is a true and correct transcript of the proceedings had in the above-entitled cause on the date or dates specified therein, and that said transcript is a true and correct transcription of my stenographic notes.

Dated at Los Angeles, California, this 3rd day of June, A.D. 1949.

/s/ J. D. AMBROSE,

/s/ SAMUEL GOLDSTEIN,

Official Reporters.

[Endorsed]: Filed July 29, 1949.

[Title of District Court and Cause.]

CERTIFICATE OF CLERK

I, Edmund L. Smith, Clerk of the United States District Court for the Southern District of California, do hereby certify that the foregoing pages numbered from 1 to 398, inclusive, contain the original Complaint Counterclaim of Defendant; Bill of Particulars; Plaintiff's Reply to Defendant's Counterclaim; Defendant's Answer; Memorandum Opposing Defendant's Motion for Summary Judgment; Defendant's Interrogatories Under Rule 33; Plaintiff's Answers to Defendant's Interrogatories; Trial Brief on Behalf of Plaintiff; Plaintiff's Supplemental Reply Brief; Conclusions of the Court and Memorandum of Decision; Findings of Fact and Conclusions of Law; Final Judgment; Motion Under Rule 52b to Amend the Findings, Conclusions and Judgment and Motion for a New Trial Under Rule 59 and Affidavits in Support; Order Denying Motions Filed September 19, 1949; Notice of Appeal; Tender of Cash Deposit in Lieu of Bond on Appeal; Order Under Rule 73(g) F.R.C.P.; Designation of Contents of Record on Appeal; Defendant's Supplemental Designation of Contents of Record on Appeal; Counter-Designation of Contents of Record on Appeal; Defendant's Second Supplemental Designation of Contents of Record on Appeal; which together with reporter's transcript of proceedings on May 25, 26, 27 and 28 and June 2 and 3, 1948; Original Defendant's Exhibits A, B, C, D, E,

E-1, F, G, H, I, J, K, K-1, L, L-1, L-2, L-3, L-4, M, N, O, P, Q, R, S, T, U, V, W, W-1, X, Y, Z, AA, BB, EE, FF, GG, HH, II, JJ, JJ-1, KK, LL, LL-1, MM, NN, OO, PP, QQ, RR, SS, TT, UU, VV, WW, XX, YY, ZZ, AAA, BBB, CCC, DDD, EEE, FFF, GGG, HHH, III, JJJ, KKK, LLL, MMM, NNN, OOO, PPP, QQQ; Original Defendant's Original Exhibits A, F, and FA; Original Plaintiff's Exhibits 1, 2, 3, 4, 5, 5-A, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17 and 18; and Original Volumes 1 and 2 of the Transcript of Record on Appeal in the Richards and Conover Company vs. LeRoy J. Leishman, case in the United States Court of Appeals for the Tenth Circuit, transmitted herewith, constitute the record on appeal to the United States Court of Appeals for the Ninth Circuit.

I further certify that my fees for preparing and certifying the foregoing record amount to \$2.80 which sum has been paid to me by appellant.

Witness my hand and the seal of said District Court this 24th day of February, A.D. 1950.

EDMUND L. SMITH,

Clerk.

[Seal] By /s/ THEODORE HOCKE,
Chief Deputy.

[Endorsed]: No. 12485. United States Court of Appeals for the Ninth Circuit. LeRoy J. Leishman, Appellant, vs. General Motors Corporation, Appellee. Transcript of Record. Appeal from the United States District Court for the Southern District of California, Central Division.

Filed February 27, 1950.

/s/ PAUL P. O'BRIEN,

Clerk of the United States Court of Appeals for the Ninth Circuit.

In the United States Court of Appeals for the
Ninth Circuit

No. 12485

LeROY J. LEISHMAN,

Defendant-Appellant.

vs.

GENERAL MOTORS CORPORATION, a Corporation,

Plaintiff-Appellee.

STIPULATION DESIGNATING CERTAIN
DOCUMENTARY EXHIBITS TO BE
PHYSICAL EXHIBITS FOR THE RECORD
ON APPEAL

It Is Stipulated by and between counsel for the respective parties that defendant's documentary exhibits K, R, U, W-1, OO, TT, UU, BBB, CCC,

DDD, EEE, NNN, OOO, PPP and QQQ, and Volume 1 and 2 of the Transcript of Record on Appeal in The Richards and Conover Company v. LeRoy J. Leishman in the United States Court of Appeals for the Tenth Circuit, filed with plaintiff's supplemental brief, because of their size, number of pages and cost of printing, shall constitute physical exhibits for the record on appeal; and all of these exhibits shall be considered by the Court in their original form as though set out in the printed record.

/s/ JOHN FLAM,
Attorney for
Defendant-Appellant.

LYON & LYON,
By /s/ LEONARD S. LYON, JR.,
Attorney for
Plaintiff-Appellee.

[Title of Court of Appeals and Cause.]

STIPULATION RE BOOK OF EXHIBITS

The parties to this appeal, through their respective counsel, hereby stipulate that the Clerk of the Court shall cause to be printed sixteen (16) copies of the Book of Exhibits which shall include plaintiff's and defendant's documentary exhibits specified as follows:

Defendant's Exhibit A: U.S. Patent No. Re. 20,827.

Plaintiff's Exhibit 17.

Defendant's Exhibit Q: U.S. Patent No. 2,108,538, which was reissued as the patent here in suit.

Defendant's Exhibit P.

Defendant's Exhibit O.

Defendant's Exhibit B: Heath Patent No. Re. 17,531.

Defendant's Exhibit C: Jacke Patent No. 2,297,-152.

Defendant's Exhibit D: Kettel Patent No. 290,-894.

Defendant's Original Exhibit F, filed with Motion for Summary Judgment: Certified Translation of Philips Danish Patent No. 52,047.

Defendant's Original Exhibit Fa, filed with Motion for Summary Judgment: Photostatic copy of Philips Danish Patent No. 52,047.

Defendant's Exhibit E-1: Marschalk Patent No. 2,072,897.

Defendant's Exhibit J: Soffietti Patent No. 2,388,-581.

Marvin Patent No. 1,704,754, from Book of Patents, Defendant's Original Exhibit A, filed with Motion for Summary Judgment.

Defendant's Exhibit S: Fitz Gerald Pat. No. Re. 20,357.

Defendant's Exhibit T: Enderwood Patent No. 1,834,272.

Defendant's Exhibit V: Page 21 of Radio Retail Magazine.

Defendant's Exhibit Y: Leishman Patent No. 2,163,343.

Defendant's Exhibit Z: Crowe 1937 License Agreement.

Defendant's Exhibit AA: Allen and Allen Letter.

Defendant's Exhibit GG: Crowe 1938 License Agreement.

Defendant's Exhibit PP: Page 41 of Elements of Alternating Currents.

Defendant's Exhibit QQ: The designated pages from Dictionary of Applied Physics.

Defendant's Exhibit RR: Page 30 of Electrical Measurements.

Defendant's Exhibit VV: Certified copy of pages from Jacke file wrapper.

Defendant's Exhibit WW: Leishman Letter to James and Franklin.

Defendant's Exhibit XX: Patent Office Action Citing Marschalk Patent.

Defendant's Exhibit FFF: Bulletin of Zenith Corporation.

Defendant's Exhibit HHH: Bast Pat. No. 1,687,-420.

Defendant's Exhibit III: Faas Pat. No. 1,928,200.

Defendant's Exhibit JJJ: Peck Patent No. 1,865,-704.

Defendant's Exhibit KKK: Vasselli Pat. No. 1,846,289 Re. 17002.

Defendant's Exhibit LLL: Bird Pat. No. 1,925,-651.

Defendant's Exhibit MMM: Morin Pat. No. 1,-828,197.

Defendant's Exhibit K-1: Drawing from Lane and Mackey File Wrapper.

Plaintiff's Exhibit 1: James and Franklin Letter to Leishman.

Plaintiff's Exhibit 2: Leishman Letter to Radio Industry.

Plaintiff's Exhibit 4.

Plaintiff's Exhibit 8: Woodbridge Pat. No. 585,-996.

Plaintiff's Exhibit 9: Miller Pat. No. 2,014,358.

Plaintiff's Exhibit 10: Cunningham Pat. No. 1,-930,192.

Plaintiff's Exhibit 18: Schaefer Pat. No. 1,906,-106.

The following designated portion of plaintiff's Supplemental Reply Brief:

Page 10 of the Appendix, line 5, to page 11, line 7.

The drawing occupying page 12 of the Appendix.

Two (2) copies of said Book of Exhibits shall be supplied counsel for plaintiff-appellee, and two (2) copies to counsel for defendant-appellant, the remainder to be retained by the Clerk of this Court to form a part of the record on appeal.

Dated this 23rd day of February, 1950.

/s/ JOHN FLAM,

Attorney for Appellant.

/s/ LEONARD S. LYON, JR.,

Attorney for Appellee.

[Endorsed]: Filed Feb. 27, 1950.

At a Stated Term, to wit: Thé October Term 1949, of the United States Court of Appeals for the Ninth Circuit, held in the Court Room thereof, in the City and County of San Francisco, in the State of California, on Monday the thirteenth day of March in the year of our Lord one thousand nine hundred and fifty.

Present: Honorable Clifton Mathews,
Circuit Judge, Presiding,
Honorable Homer T. Bone,
Circuit Judge.

[Title of Cause.]

**ORDER THAT EXHIBITS NEED NOT BE
REPRODUCED IN PRINTED TRANSCRIPT**

Upon consideration of the stipulation of counsel for respective parties, and good cause therefor, appearing,

It Is Ordered that the original exhibits transmitted as a part of the record on appeal, and marked Defendant's K, R, U, W-1, OO, TT, UU, BBB, CCC, DDD, EEE, NNN, OOO, PPP and QQQ, and Vol. 1 and 2 of the record in "Richards and Conover Co. vs. Leishman, C.A. 10th Cir." need not be reproduced in the printed transcript of record but will be considered by the Court in their original form.

[Title of Court of Appeals and Cause.]

CONCISE STATEMENT OF POINTS UPON
WHICH DEFENDANT - APPELLANT
WILL REPLY AS REQUIRED BY RULE
75(d) F.R.C.P. AND RULE 19(6) OF THIS
COURT

Pursuant to, and in accordance with, Rule 75(d) F.R.C.P. and Rule 19(6) of this Court, notice is hereby given that at the hearing of this appeal the defendant-appellant will rely upon the following points:

1. That the district court erred in finding that claims 7, 8, 9, 10, and 11 of United States Reissue Letters Patent No. 20,827 are invalid and void.

2. That the district court erred in making Finding 8 to effect that "Every element, feature and mode of operation of the tuner of the patent in suit is anticipated in the light of the teachings of Marschalk, Patent No. 2,072,897 and Schaefer, Patent No. 1,906,106."

3. That the district court erred in stating, in Finding 9, that "the co-axial characteristic of the patented tuner is anticipated by said Schaefer patent . . ."

4. That the district court erred in stating, in Finding 9, that the "function and mode of operation" of the Schaefer device "is identical with that of the patented tuner."

5. That Findings 8, 9, and 10, and the portions of the opinion upon which they are based, have no

support whatever in the record, and are contrary to all the expert testimony with respect to the Schaefer and Marschalk devices, which said testimony was undisputed.

6. That Findings 10, 11, and 12, together with the portions of the opinion upon which they are based, are unwarranted assumptions unsupported by the record.

7. That Finding 13 is both incorrect and irrelevant because (1) parts of the Cunningham device that were essential to its mode of operation were omitted from the model, (2) the method of setting the so-called tappet in the model was entirely different from the method that needed to be employed in Cunningham's device, and (3) the Cunningham device is from a non-analogous art in which the problem that was solved by the patent in suit never arose.

8. That Finding 14 is in error for the reason that the Cunningham patent is from a different and non-analogous art not encountering the problem that was solved by the patent in suit.

9. That Finding 15 is clearly in error.

10. That the court erred in making Finding 16.

11. That court erred in not holding that the claims at issue are valid.

12. That inasmuch as Judge Mathews, writing for the court in *Leishman v. Associated Wholesale Electric Co.*, 137 F(2) 722, 727, 728, specifically wiped out the lower court's holding that the claims here at issue were invalid for want of invention,

the district court in the instant case is in error in stating that "there are rather significant expressions in the opinion of Judge Mathews, writing for the court in *Leishman v. Associated Wholesale Electric Co.*, supra, that induce at least a surmise that our own Appellate Court had its misgivings as to any inventive qualities in the claims of the patent in suit."

13. That the district court erred in attaching so much weight to the opinion of the Court of Appeals for the Tenth Circuit in *The Richards and Conover Company v. Leishman*, which said Court of Appeals was demonstrably in reversing the U. S. District Court for the Western District of Oklahoma in its holding that the claims here at issue are valid.

14. That the district court erred in denying both Defendant's Motion under Rule 52b to Amend the Findings, Conclusions and Judgment, and Defendant's Motion for a New Trial under Rule 59.

15. That inasmuch as the final opinion of the Court of Appeals for the Tenth Circuit in *The Richards and Conover* case, rendered subsequent to the trial herein, was based upon new grounds raised for the first time in the said appellate court's own opinion, the district court in the instant case was wrong in refusing to grant a new trial for the purpose of introducing evidence to show that said new grounds were baseless and should not be followed here.

16. That inasmuch as Defendant's Motion for a New Trial was supported by affidavits from the professors of mechanical engineering at California Institute of Technology and the University of Southern California, and also from the head of Engineering Research, Department of Engineering, at the University of California at Los Angeles, which said affidavits unanimously stated that the opinion of the Court of Appeals for the Tenth Circuit, *supra*, was based upon erroneous conceptions of mechanical principles, the district court in the instant case should have granted the defendant a new trial to permit him to present evidence to refute the erroneous conclusions of the Court of Appeals for the Tenth Circuit with respect to invention, which conclusions have been adopted herein.

17. That the district court erred in not deciding the issue of validity according to the formulas recommended by the Supreme Court and by this Honorable Court of Appeals for the Ninth Circuit.

18. That the district court was wrong in stating, in its opinion, that the defendant argued that the court should broaden the claims to cover tuners not operated by levers, whereas, actually, the defendant constantly argued that the claims should not be narrowed to lever-operation, and should be interpreted literally. As the Court of Appeals for the Tenth Circuit said in *The Richards and Conover Company v. Leishman*, 172 F(2) 365,368: "However, claims 7 to 11, inclusive, embrace a single rocker and corresponding adjustable tappets

mounted on pivots, means for moving each tappet so one of its sides engages one arm of the rocker and rotates the rocker until the other side of the tappet engages the other arm of the rocker, and they do not specifically embrace a lever means for carrying and moving the tappets."

19. That the court erred in not holding that both of the plaintiff's accused tuning devices are infringements of the claims here at issue.

/s/ JOHN FLAM,

Attorney for Appellant.

Affidavit of Service by Mail.

[Endorsed]: Filed Feb. 27, 1950.



No. 12,485.

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

LEROY J. LEISHMAN,

Defendant-Appellant,

vs.

GENERAL MOTORS CORPORATION,

Plaintiff-Appellee.

DEFENDANT-APPELLANT'S OPENING BRIEF.

LEROY J. LEISHMAN,

Appellant, Pro Se.

FILED

AUG 11 1950

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2978 Wilshire Boulevard, Los Angeles 5,

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PAUL P. O'BRIEN,
CLERK

28. 5. 05

1. 1. 11

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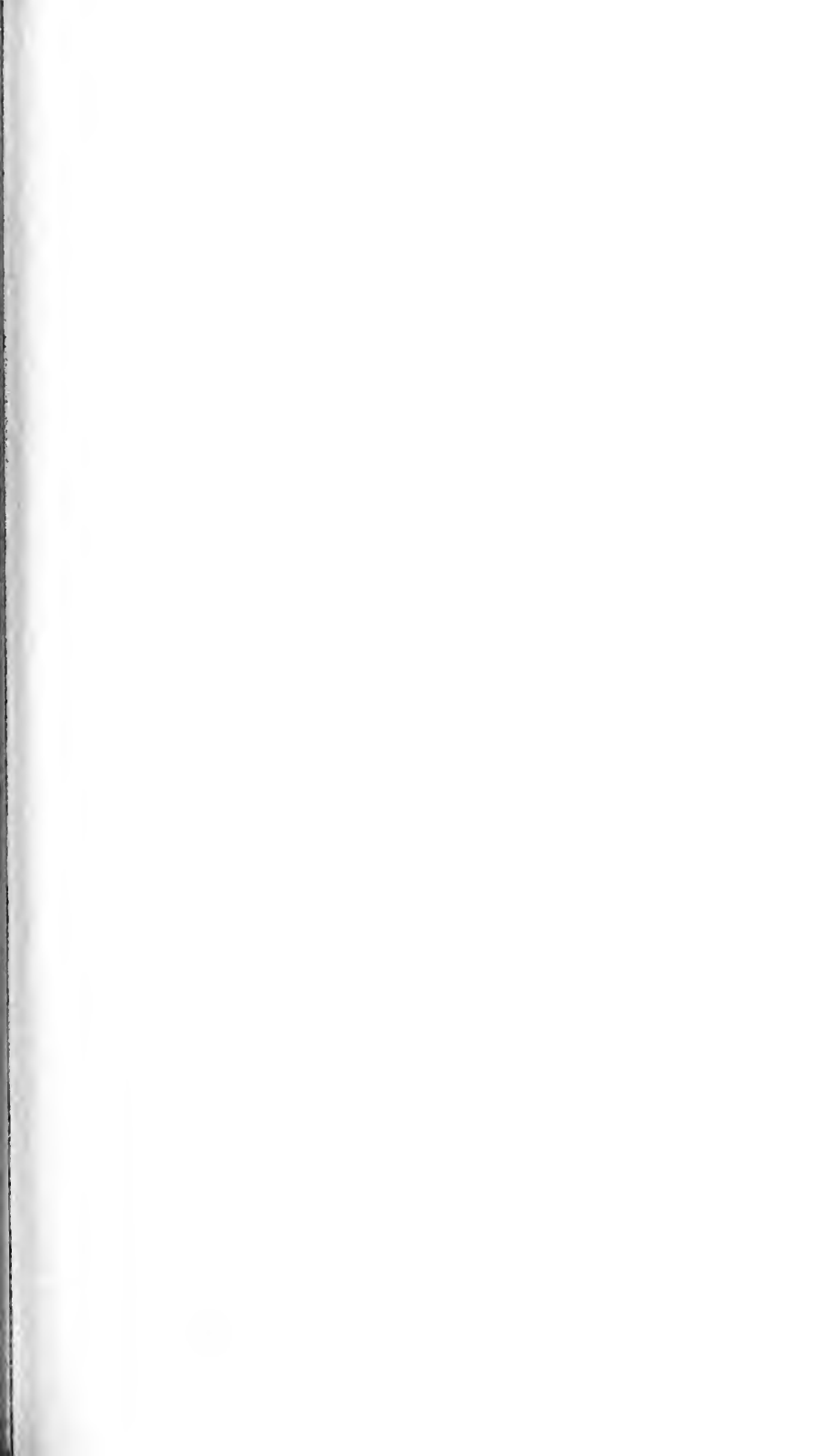
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No. 12,485.

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

LEROY J. LEISHMAN,

Defendant-Appellant,

vs.

GENERAL MOTORS CORPORATION,

Plaintiff-Appellee.

DEFENDANT-APPELLANT'S OPENING BRIEF.

I.

STATEMENT OF PLEADINGS AND FACTS UPON WHICH JURISDICTION IS BASED.

This is an appeal by defendant from a final judgment [R. 56] entered on September 9, 1949, holding that claims 7 to 11, inclusive, of Reissue Patent No. 20,827 are invalid and are not infringed by the manufacture, use, or sale of tuners as exemplified by Exhibits 1 and 2 filed with the complaint herein.

The jurisdiction of the District Court was based upon (a) U. S. Code, Patents, Title 35, Section 67; (b) the Declaratory Judgment Act, Section 274-D of the Judicial Code, Title 28, U. S. Code, Section 400 (now re-enacted as Sections 2201 and 2202 of the new Title 28).

The complaint [R. 2] alleges that claims 7 to 11 of Reissue Patent No. 20,827 were invalid and not infringed. Defendant's answer [R. 23] denies that the said claims

were invalid and not infringed; and defendant's counterclaim [R. 15] charges infringement of the said claims and asks for the usual accounting.

On October 3, 1949, defendant made a motion under Rule 52b, F. R. C. P., to amend the findings, conclusions, and judgment, as well as a motion for a new trial under Rule 59 [R. 59].

These motions were denied on November 2, 1949 [R. 99].

Notice of appeal from the final judgment was filed on December 1, 1949 [R. 99].

The jurisdiction of the Court of Appeals for the Ninth Circuit is based upon Judicial Code, Title 28, U. S. C., Section 1291.

II.

STATEMENT OF THE CASE.

A. Introduction.

1. Brief Statement of the Issue and of the Most Pertinent Facts.

This is a patent infringement suit, the subject matter of which pertains to automatic, or push-button, tuning devices for radio receivers.

The complaint [R. 2] was filed under the Declaratory Judgment Act and alleges that claims 7 to 11 of appellant's patent No. Re. 20,827 [R. 775] are invalid and not infringed by the automatic radio tuning devices manufactured by appellee General Motors Corporation. Appellant denied [R. 23] that the said claims were invalid and not infringed, and filed a counterclaim [R. 15] asserting that the said claims were *valid* and *infringed* by appellee's

tuners, and the court was asked for an accounting and an injunction.

The grant in 1938 of the patent here at issue was preceded by at least fourteen years of research all over the world to produce a satisfactory automatic tuner.

The first patent application in this field was filed in 1924, this application resulting in the Zenith Radio Corporation's Heath reissue patent No. 17,531 [R. 800]. On November 20, 1928, W. L. Jacke filed an application on an automatic radio tuning control [R. 809]. The latter application, owned by Philco Corporation, became involved in a series of patent office interferences with the said Heath patent [R. 1083, 1092, 1096 and 1101], and other interferences were declared between Jacke and applications filed by Butler [R. 1083], Rice [R. 1092], Trenor [R. 1092], Crilly [R. 1114], Thomas [R. 1120], Long [R. 1125] and Goldsborough [R. 1129]. The Long application was owned by Western Electric Company, Inc. [R. 1128], the Goldsborough application by Westinghouse Electric & Mfg. Co. [R. 1131], the Rice application by General Household Utilities Company [R. 1113], and the Trenor application by John Hays Hammond, Jr. [R. 1094], whose wide inventive activities are probably within the judicial knowledge of the court.

Some of these early automatic tuners were very crude [See Zenith's Heath patent, R. 800] and others were very complicated [See Philco's Jacke patent, R. 809], yet these large interests fought long interferences over them that were finally terminated by the decision in the case of *Jacke v. Long*; *Jacke v. Goldsborough*, 111 F. 2d 184, which involved the Philco, Western Electric and Westinghouse

interests. As a result of the delays entailed by these interferences, the Jacke patent did not issue until 1942 [R. 809], fourteen years after it was applied for. The interferences involving the Zenith Radio Corporation's Heath application were terminated in the federal courts in 1939 [R. 1092], fifteen years after Heath's application was filed.

These long-fought interferences show the importance which Zenith, Philco, Western Electric, Westinghouse, General Household and John Hays Hammond, Jr. attached to the patent applications that were involved, yet none of the devices disclosed in these applications ever came into commercial use.

Striving for a more simple and effective tuner, other inventors and research organizations, both here and abroad, tried to adapt a type of mechanism first used in automatic clock setting devices and in cash registers. But in the radio art a problem is encountered that is not met with in these other fields. Each button or key of an automatic tuner must be capable of being adjusted, or "set," so that it will bring in any one of the hundreds of broadcasting stations which the user may desire. This involved unexpected difficulties. In the simplest forms of the mechanism, the parts tended to "creep," or move, during the setting process, and it was extremely difficult to get them adjusted properly. This difficulty, where it was removed at all, was dealt with by introducing many extra parts, or else tedious methods of adjustment were employed.

The record shows (and the record will be specifically referred to hereinafter) that various experimenters and

engineers, including those of Zenith Radio Corporation and General Motors, developed four different tuners each effecting a solution to the "creeping" problem in a different but very complex manner. The Zenith tuner solved the problem by introducing eighteen extra parts. Soffietti, in Italy, devised a creep-free tuner that had only one extra part per button—or five extra parts in a five-button, or five-station, tuner; but this tuner was very difficult and tedious to adjust. Lane and Mackey, in the United States, developed a very complex tuner that also defeated the "creeping" difficulty, but it was extremely tedious to adjust and very impractical. General Motors Corporation improved upon the Zenith tuner, but the number of extra parts required in a five-button tuner was twenty—that is, four extra parts for *each button*.

Defendant Leishman solved the problem *without adding any extra parts whatever*. As soon as his solution became known, it was immediately adopted by a long list of radio manufacturers as hereinafter shown. Zenith Radio Corporation had long since discarded its complicated Schaefer tuner that defeated "creeping" by adding eighteen extra parts; but after Leishman's simple solution appeared, Zenith purchased tuners embodying Leishman's principle from his licensee, Crowe Name Plate & Manufacturing Company, and later began manufacturing its own tuners of this type with an announcement which said: "This system is so simple and fool proof, that complete replacement should seldom, if ever, be necessary." [R. 1140.]

General Motors abandoned its own creep-free tuner in favor of appellant's more simple solution and used Leishman's construction in more than *one million* radio receivers up to the time of the trial.

After its own engineers as well as those of the Zenith Corporation had failed to arrive at Leishman's simple structure, the giant General Motors Corporation now comes into this circuit with a Declaratory Judgment action and asks this Honorable Court to hold that Leishman's solution involved only mechanical skill. The lower court so held, and it is from that decision that this appeal is taken.

2. Previous Litigation.

The patent claims that are here involved have been litigated in four different infringement suits—three of them in this circuit.¹ These claims have been held valid, and invalid; infringed, and not infringed, by tuners that are patentwise the same. But none of the previous records contained so much pertinent evidence as the record in the present case, and appellant therefore believes that this Honorable Court will be able to secure a clearer understanding of the facts with respect to validity and infringement than has heretofore been possible. None of the previous decisions in this circuit is *stare decisis* here. Not only does the new evidence make former decisions with respect to this patent inapplicable, but recent decisions of this Honorable Court and of the Supreme Court are of such a nature that an entirely new adjudication is required.

The first case involving the claims here at issue was *Leishman v. Associated Wholesale Electric Co.*, 36 Fed. Supp. 804. That suit, in which the accused device was

¹Only two of these four suits were brought by Leishman. The other two were filed under the Declaratory Judgment Act by large corporations who wanted the patent declared invalid or their own products held free of infringement.

manufactured by Crosley Corporation, was brought in the U. S. District Court for the Southern District of California. In that case, where the record lacked many of the important facts here presented, Judge Ben Harrison held the claims invalid for want of invention, saying that Leishman's solution was well known in the art "when you desire parts to move together harmoniously and free from friction." Leishman appealed, pointing out that the problem was exactly opposite from this—*that the parts must be prevented from moving even a hair's breadth.* This Honorable Appellate Court struck out the lower court's holding that the claims were invalid for want of invention (137 F. 2d 722, at 728). The presumption of validity was thus restored. But the Appellate Court held that Crosley had avoided infringement by operating the combination by means of a plunger instead of a lever as shown in the patent.

Leishman then filed a suit in the United States District Court for the Western District of Oklahoma against The Richards and Conover Company, Civil Action No. 2155, charging infringement of the same claims through the sale of Motorola radio receivers equipped with automatic tuners, patentwise the same as those accused in the *Associated* case, *supra*. The district court in that case held the claims "clearly valid and clearly infringed." [Finding 6 on p. 29 of printed record filed with Plaintiff's Supplemental Brief and designated as part of the present record on appeal.]

While the Oklahoma suit was pending, Radio Condenser Company and General Instrument Corporation filed a Declaratory Judgment action against Leishman in U. S. District Court for the Southern District of

California.² Radio Condenser stated that it manufactured the tuners used in the Motorola radio receivers sold by the jobber-defendant in Oklahoma. General Instrument Corporation joined Radio Condenser Company as a plaintiff on the alleged ground that it manufactured tuners like those made by Radio Condenser. These plaintiffs asked for a summary judgment of non-infringement, stating that there was no need for a trial because their tuners were admittedly the same patentwise as those freed in the *Associated* case, and they petitioned that Leishman be enjoined from prosecuting the Oklahoma action. Leishman was not enjoined, but subsequent to the entry of the interlocutory judgment in the district court in Oklahoma, the requested summary judgment of non-infringement was granted by Judge Beaumont and affirmed by this Honorable Appellate Court (167 F. 2d 890).

General Motors Corporation, the instant plaintiff, filed its Declaratory Judgment complaint shortly after the judgment in Leishman's favor was entered in Oklahoma. The trial was held while the appeal in the Oklahoma case was pending before the Court of Appeals for the Tenth Circuit, which rendered its decision before Judge McCormick entered his opinion herein.

The Court of Appeals for the Tenth Circuit rendered two opinions in the said Oklahoma case of *Leishman v. The Richards & Conover Co.* (172 F. 2d 365). The first of these opinions was based upon the theory that defend-

²The agreements under which these concerns acted together in bringing the action, have since been held in violation of the Sherman Act. *United States v. General Instrument Corporation, Radio Condenser Company, et al.*, 87 Fed. Supp. 157.

ant's solution of the problem was well known to skilled workers in the art. Leishman filed a petition for a rehearing showing that this was not the case; that the opposing expert had admitted that he knew of no such prior use; and that the matter could be clarified if the court had access to one of the exhibits that had been designated as part of the record on appeal, but which had not been transmitted to the Appellate Court. In the second opinion the said court based its decision upon its own mathematical analysis of the problem that confronted the inventor; and the court, ignoring the record as to what the workers in the art had *actually* done, held that such workers would make an analysis like that made by the court and readily arrive at the solution set forth in the patent. The district court in Oklahoma was accordingly reversed in its holding that the claims at issue were valid.

After the decision of the Court of Appeals for the Tenth Circuit became available, Judge McCormick rendered the decision herein, stating that [R. 42] "while the decision of the appellate court in the Tenth Circuit (Richards and Conover Company v. Leishman, 172 F. 2d 365), does not operate to control us in this action, our own Court of Appeals having never specifically invalidated the patent claims in issue, we think, however, that the appellate decision in the Tenth Circuit having been based upon substantially the same record as made herein, we should and do consider such decision as highly persuasive and as weakening any presumption of validity to the claims in the suit [that] would otherwise attach to the Leishman Reissue Patent by reason of its issuance.", and the claims herein were accordingly held invalid.

Judge McCormick's frank statement that his own opinion was greatly influenced by the Tenth Circuit decision, created a unique and unusual situation. The Court of Appeals for the Tenth Circuit admitted that the analysis of "creeping" upon which its decision was based, was *its own* analysis, and the court did not contend that any such theory or expert testimony had been advanced by either side. The grounds on which the claims were finally held invalid were there presented *for the very first time* by the court itself in its final decision after a second hearing. Leishman consequently lost *The Richards and Conover* case on grounds on which he had never had his day in court. The trial of the present case had already been held, and Leishman thus had no opportunity to introduce expert testimony to refute these grounds in the present case either. It thus seems very unjust and highly improper that the Tenth Circuit decision which was based upon these grounds should have been used against Leishman in the instant case.

A somewhat parallel situation recently arose in the *Seventh* Circuit in the case of *Hazeltine Research, Inc. v. General Electric Co.*, 86 U. S. P. Q. 233, F. 2d A suit was filed in the District Court for the Northern District of Illinois involving a patent which the Court of Appeals for the *Sixth* Circuit had previously held invalid on a ground that had not been interposed in, nor considered by, the court below, nor had the ground been briefed or argued by either party. But notwithstanding the fact that the patent owner had thus never had its day in court on the ground upon which it had lost the *Sixth* Circuit case, Judge Sullivan in the Northern District of Illinois in the *Seventh* Circuit nevertheless granted a

summary judgment against the patent owner in the new case because of the Sixth Circuit holding. When Judge Sullivan's decision was appealed, the Court of Appeals for the Seventh Circuit on June 28, 1950, said (86 U. S. P. Q. 233, 235, F. 2d):

“As to *Hazeltine v. General Motors*, 170 F. 2d 6, it should be observed that the defense of ‘statutory bar’ was not interposed in the District Court. It was not briefed or argued by either party and not even considered in the lower court. *Consequently that decision is entitled to but little weight in the present proceedings.*” (Emphasis added.)

The judgment was accordingly reversed and the cause remanded to the District Court for a trial on the merits.

The Tenth Circuit decision which Judge McCormick followed here, was based upon a supposed analysis of the cause of creeping that contained grave errors, and the appellate court's ideas of mechanical forces were at variance with commonly known laws of physics. Appellant was consequently anxious to have the present case reopened so that experts could be brought into court to explain and demonstrate the facts. He accordingly filed a Motion for a New Trial under Rule 59 [R. 59], supported by affidavits from the three highest authorities on mechanical engineering in Southern California. Appellant thought that if a single affidavit from such an authority were presented, the court might think the affidavit represented an isolated view. He accordingly filed an affidavit from the leading authority in each of the three

leading universities in Southern California—i.e., California Institute of Technology, University of Southern California and University of California at Los Angeles [R. 71 to 83]. These authorities were in unanimous agreement that the analysis made by the Court or Appeals for the Tenth Circuit has no scientific basis whatever, and that the figures which the court drew are entirely worthless for any analytical purpose. But appellant's motion was denied [R. 99].

The present situation demonstrates the folly of not using the reliable method of determining invention recommended by this Honorable Court of Appeals for the Ninth Circuit in the recent case of *Pointer, d.b.a. Pointer-Willamette Co. v. Six Wheel Corporation*, 177 F. 2d 153 at page 162:

“ ‘Courts,’ said Judge Learned Hand, ‘made up of laymen as they must be, are likely either to underrate, or to overrate, the difficulties in making new and profitable discoveries in fields with which they cannot be familiar; and, so far as it is available, they had best appraise the originality involved by the circumstances which preceded, attended and succeeded the appearance of the invention. Among these will figure the length of time the art, though needing the invention, went without it: the number of those who sought to meet the need, and the period over which their efforts were spread: how many, if any, came upon it at about the same time, whether before or after: and—perhaps most important of all—the extent to which it superseded what had gone before.’ ”

This kind of evidence is available in abundance in the present case.

B. Explanation of the Specific Problem Involved and of the Gestalt Which Confronted the Inventor.

The patent claims at issue pertain to automatic tuning devices for radio receivers. In tuners of the type here involved, the user presses keys or buttons, each one of which causes the rotatable knob or dial to be turned to the exact position at which the desired station comes in. But before the keys may be so used, each button must be *adjusted* or *set* for the particular station desired. One of the purposes of the present invention is to make it easy to do this. Accordingly, one of the objects as set forth on the first page of the patent, is "to afford means whereby the apparatus *may easily be adjusted* so that a definite manual operation [the pressing of the key or button] will cause the desired rotatable element [the dial or knob] to be turned to a desired position." The question before the court is to determine whether appellant's "means whereby the apparatus *may easily be adjusted*" involved invention or only mechanical skill.

In *Pointer, d.b.a. Pointer-Willamette Co. v. Six Wheel Corporation*, 177 F. 2d 153, at page 159, this Honorable Court said:

"* * * the determination in each case depends upon the specific facts and the perspective of the situation, the gestalt, to use the expressive German word, which confronted the inventor in the particular case."

The court must therefore understand the exact situation that faced the inventor. The inventor is always faced with a problem, *not* with the solution. When the solution is presented to a court before it knows the problem, a knowledge of the solution makes it very difficult for such

court to view the problem in its true perspective. This memorandum will therefore first explain the background and the problem, together with the industry's method of meeting the problem, before discussing the solution which the court is to appraise.

It has already been mentioned (p. 4 hereof) that the first automatic tuners that were developed by the large radio and electrical interests never reached the stage of commercialization and that later inventors approached the problem by attempting to adapt a type of mechanism used in clock setting devices and in cash registers. The gestalt in this particular case will therefore be better understood if we first explain two of the early devices of this type.

It is agreed by both appellant and appellee that the Kettell patent [R. 817] No. 290,894, issued December 25, 1883, was one of the first devices for turning a rotatable shaft to a definite known position. This patent, in fact, is the first one on the list of pertinent prior art cited by appellee in the complaint [R. 7]. For the convenience of the court, Fig. 2 and a portion of Fig. 1 of the Kettell patent have been reproduced on the folding insert following the appendix at the back of this memorandum, together with Figs. 1 and 10 from a patent to Woodbridge, which will later be considered. If the court will unfold this insert the figures from the Kettell patent will lie adjacent the right hand pages of this memorandum for easy reference.

Before electrically operated clocks came into wide use, it was customary to equip clocks in business institutions with an arrangement whereby they were automatically set to the correct time every hour by means of an electrical impulse transmitted over wires. The Western Union operated such a service, and the clocks were set by an impulse transmitted from the U. S. Naval Observatory

in Washington. In Kettell's clock, as shown on the first page of his drawings, the electrical impulse causes the electro-magnet K, Fig. 1, by means of appropriate intermediate mechanism, to move the lever E (shown in blue) so that the projections or "tappets" (colored red) that extend to the left will engage the rod D (green), causing it to turn to the position shown in dotted lines. Inasmuch as the rod D is connected to the minute hand, this action causes the minute hand to point straight up to XII. Regarding these parts, Kettell says [R. 819, lines 67 to 74]:

"D represents a diametrically-arranged rod secured to or passing through the arbor of the minute-hand, so as to revolve with it.

"E is a vibrating lever, having two projecting arms on the side nearest the arbor of the minute-hand and which are arranged to operate the rod D when it is necessary to set the clock."

Fig. 2 from the Kettell patent shows a modification of this device in which the projections or tappets (colored red) are formed on a plunger (colored blue). In this modification the pins f on the disc perform the function of the rod D in Fig. 1. Of this arrangement, the patent says on page 820 of the present record, lines 81 to 83:

"a represents a slide working in ways b, and having lateral arms [tappets] similar to lever F, Fig. 1 [obviously this should be the lever E, because F is the cam], it serving the same purpose."

Either of the forms of Kettell's mechanism thus successfully rotated the minute hands to the exact position required, but there was only one such position—the one in which the minute hand pointed straight up to XII.

In cash registers and adding machines, as already mentioned early in this memorandum, it is also necessary to turn shafts to definite positions, but there are ten such positions instead of only one. Woodbridge's patent [R. 713] discloses a representative mechanism of this type. Its pertinence is recognized by appellee, who listed it as the third patent in the prior art cited [R. 7] in its complaint. As already mentioned, Figs. 1 and 10 of the Woodbridge patent are reproduced on the folding insert following the appendix hereto, along with the Kettell figures which have just been explained. The relevant figures from the Woodbridge patent, to which reference will be made, are at the right of the Kettell figures. In Woodbridge's Fig. 2 [see page 714 of the present record], it will be seen that this device is provided with ten keys bearing the digits 1 to 9 and a zero. These keys are on the ends of levers C^1 . The opposite ends of these levers, shown in Fig. 1, page 713, are provided with ends arranged at different angles. These ends, or "tappets," engage a rocker d , shown on page 714. The rocker has two side bars d^2 and a central shaft d^6 that connects with another shaft d^3 . Each of the tappets is arranged at a different angle with respect to the lever *of which it is an integral part*. As a result of the different angles of these tappets, the rocker will assume a different angle or tilt according to which lever is operated.

The modifications shown in Woodbridge's Fig. 10 show how the tappet c^3 may be mounted on the end of a plunger c^4 for moving the rocker d in the same manner as in the form illustrated in Fig. 1.

The significance of this patent was recognized in Judge Harrison's opinion in the Associated case, *supra*, where he said (36 Fed. Supp. 804 at 808):

“* * * when the machines are built, the manufacturer knows the various amounts that it is going to be necessary for the user to ring up, consequently, he governs the position of the rocker by the shape of the tappet that engages it. But in the radio industry the manufacturer cannot predetermine the stations in the various territories that are usable nor can he predetermine the idiosyncrasies of the ultimate user. As a result any radio tuning device must be easily and accurately adjusted in the home of the purchaser. Inasmuch as the movement of the rocker is controlled by the angle that the tappet is set when the two become completely engaged, it is necessary to be able to easily adjust the position of the tappet. Therefore, the problem before any person desiring to adapt a rocker and tappet to a radio tuning device was to develop a means for an accurate and simple method of adjusting the tappet so that it would, when in *complete engagement with the rocker, rotate it to the angle required to bring in the particular station that the user might designate*. Did this require mere mechanical skill or call into being inventive genius?” (Emphasis added.)

On its face this seemed like a simple problem, but those who attempted its solution found that it involved peculiar and unexpected difficulties. This Honorable Court is called upon to determine whether the removal of these difficulties amounted to invention or only the skill of the calling. In its footnote No. 3 in the *Six Wheel* decision, *supra*, this Honorable Court quoted Judge Learned Hand on this point as follows:

“An invention is a new display of ingenuity beyond the compass of the routinier, and in the end that is all that can be said about it. Courts cannot avoid the duty of divining as best they can what the day to day capacity of the ordinary artisan will produce.”

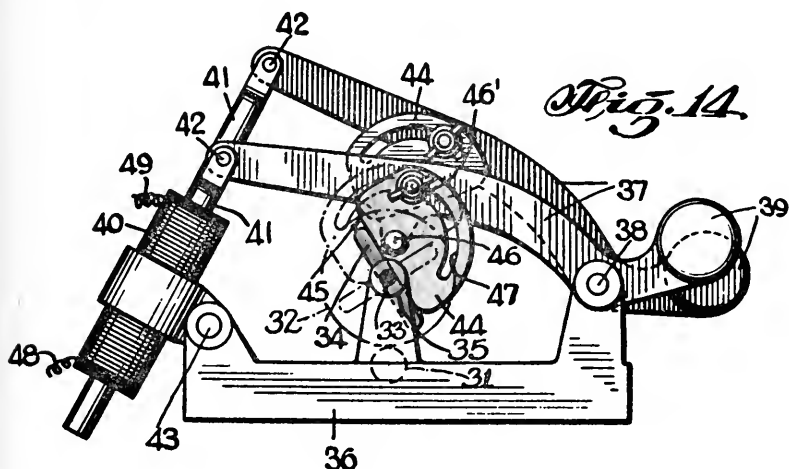
In the instant case, the court has before it a very complete record of what these artisans actually did, and the court is thus in a position to *know* whether appellant's simple solution of the problem involved more than mechanical skill. This problem is one that engaged the attention of skilled engineers, including those of Zenith Radio Corporation and General Motors Corporation, and their complicated solutions are in the record.

The nature of the difficulties that arose in providing an easily adjustable tappet, and a few of the devices that were proposed to overcome them, will be briefly described.

C. The Difficulties That Were Encountered in Providing Simple Adjustable Tappet Tuners Were Left Unsolved by Some Experimenters, While Others Solved the Problem by Introducing Complicated Auxiliary Parts or Complex Methods of Adjustment.

The difficulties encountered in providing an adjustable tappet for positioning a rotatable rocker are well demonstrated in the tuner proposed by Marschalk. His patent, No. 2,072,897, is Defendant's Exhibit E-1 [R. 822]. Fig. 14 from this patent is reproduced on the following page. The rocker 34 has been colored green, and the tappet 44 has been colored red. A model of Marschalk's tuner, Defendant's Exhibit E, was demonstrated at the trial [R. 131 to 133].

To adjust Marchalk's tappet, we must first loosen the wing-nut 46'. This releases pressure from the tappet, permitting it to turn freely about the pivot 46. The station



that is later to be tuned in *automatically* by this particular tappet is now tuned in *manually* by the regular tuning knob (not shown). Inasmuch as the tuning condenser 29 [Fig. 13, R. 824] is operatively connected to the rocker 34 (green), this tuning operation causes the rocker to be rotated until it assumes a definite angular position corresponding to the dial reading for that particular station. The angular position of this rocker is now to be used to determine the angular position in which the tappet is to be set. This may be accomplished by pressing down on the lever 37 until the loosely pivoted tappet firmly engages the rocker, thus causing the tappet to be turned to *the same angular position as the rocker itself*.

But as soon as one presses down on the lever to bring this about, a peculiar thing occurs. If the rocker happens to be in the tilted position shown in the figure, both the rocker and the tappet will flip around and tend to assume a horizontal position. If the rocker and tappet are in the

opposite tilted position shown in dotted lines, this same unexpected thing takes place.³

Because of the peculiarity just described, it becomes a difficult task to set the tappet on the Marchalk device. One must be certain that sufficient pressure is applied to cause the tappet to take the *exact* position of the rocker, and yet great care must be taken not to apply enough pressure to cause the rocker and tappet both to move. As demonstrated at the trial [R. 131-133], if the rocker is tilted toward either extreme position, slight excess pressure will sometimes cause the tappet and rocker to rotate more than 10 degrees. Even a small fraction of one degree is more movement than can be permitted, for that much of a deviation from the true angular position will throw the station out of sharp tune. In some instances, a station can be lost *entirely* by considerably less than one degree of movement.

On the Marchalk device, even the tightening of the wing-nut is apt to result in the inadvertent application of enough pressure to detune the set unless the rocker happens to be fairly close to horizontal. And obviously the setting is not completed until the wing-nut has been firmly screwed up so that the tappet will be held in its adjusted position.

³The peculiar flipping around that took place prior to the adoption of Leishman's teachings when a freely pivoted tappet was brought into engagement with a tilted rocker, will frequently be referred to in this memorandum as "creeping". This term was used by the expert opposing the patent in *The Richards and Conover* case. Its use was adopted by the district court judge in that trial, and it reappears in the opinion of the Court of Appeals for the Tenth Circuit. The use of the term "creeping" will thus avoid having to refer to this difficulty by such long terms as "the peculiar flipping around or unwanted rotation that normally takes place during the adjusting process when a freely pivoted tappet is brought into engagement with a tilted rocker."

After the tappet has been correctly positioned and locked in that adjusted position, it will be clear that any subsequent operation of the lever will cause the rocker to assume the same angular position as the tappet, regardless of the angular position in which the rocker may be found. Stated differently, this means that no matter to what other station the radio receiver may be tuned, the operation of this lever will bring in the station for which the tappet has been set. But if the tappet has not been accurately adjusted, or if there was the slightest movement during the adjusting process, the operation of the lever will not tune the station in properly. An inaccurate automatic tuner, or an automatic tuner that is critical to set up, is worse than no automatic tuner at all.

Regarding the degree of accuracy required, Mr. Leishman explained at the trial [R. 135 to 137] that $1/19$ of one degree is the maximum variation that is permissible. As shown by the numbers on a radio dial, the broadcast band extends roughly from 550 kilocycles to 1700 kilocycles—a range of about 1150 kilocycles [R. 136]. The usual rocker in a radio tuner turns through an angle of about 60 degrees [R. 136], which means that each degree represents an average variation of 19 kilocycles. Proper tuning requires that the radio receiver be tuned to within one kilocycle of the frequency on which the desired station is broadcasting [R. 136]. This, of course, corresponds to $1/19$ of one degree of movement of the rocker.

It has already been mentioned that the rocker in the Marschalk tuner frequently moves more than 10 degrees from its extreme tilted position when the loosened tappet is pressed against the rocker during the setting, or adjusting process. A movement of only six degrees is more than 100 times as much as can be tolerated.

Marschalk was far more than a mere mechanic skilled in the art. A perusal of his patent will reveal that he was an inventor of high order. Yet he left this problem unsolved. The reason for the peculiar behavior of his tappet and rocker during the adjusting process was obscure, and Marschalk apparently thought the difficulty was inherent in a tappet and rocker combination, and that it would therefore have to be tolerated.

Any inventor trying to position a rotatable rocker by means of an adjustable pivoted tappet would encounter the same difficulty during the adjusting process that is exhibited in the Marschalk device.

At least six other inventors tackled the problem of turning a rotatable member to predetermined angular positions by means of adjustable tappets. These were Soffietti in Italy, and Schaefer, Lane, Mackey, Schwarz and Leishman in the United States. Let us see how they fared.

1. Adjusting the Lane and Mackey Tuner Was a Very Slow Process.

Lane and Mackey's attempt to use an adjustable tappet to position a rocker, is disclosed in the file wrapper of their patent application [Deft. Ex. K]. A positive photostat of their Figs. 2, 3 and 4, is in evidence as Defendant's Exhibit K-1 [R. 842], and a reproduction of Fig. 3 is provided on the opposite page. These inventors have a rocker 11-12-13 (colored green) and a tappet 19-20 (colored red). To avoid the difficulties encountered when a freely pivoted tappet is brought into engagement with a tilted rocker, which Marschalk was unable to overcome, these inventors go to great extremes. It will be observed that their tappet is arranged so that it is

never free to turn and that it can be rotated only by the worm 46, which has threads that fit between the teeth 49 that are formed on the periphery of the tappet.

To adjust Lane and Mackey's tuner, one must first press the button 30 inwardly until the tappet, shown in red, engages the rocker, colored green. This causes the rocker to turn until it assumes the same angular position as the tappet, because the tappet is always locked against free rotation by the threads of the worm 46 that mesh with the teeth around the tappet. The end of a screw driver is then inserted into the screw-head 51, which is attached to the worm 46. When the screw driver is turned, the worm 46 is rotated, causing the tappet to turn the distance from one tooth to another every time the worm makes a complete revolution. If this is done while the tappet is in engagement with the rocker, the rocker will, of course, turn with the tappet. Consequently by constantly turning the screw driver, the tappet and rocker may be slowly rotated until the desired station is tuned in, and the tappet will then be properly adjusted. Whenever this tappet is again pressed into engagement with the rocker, the latter

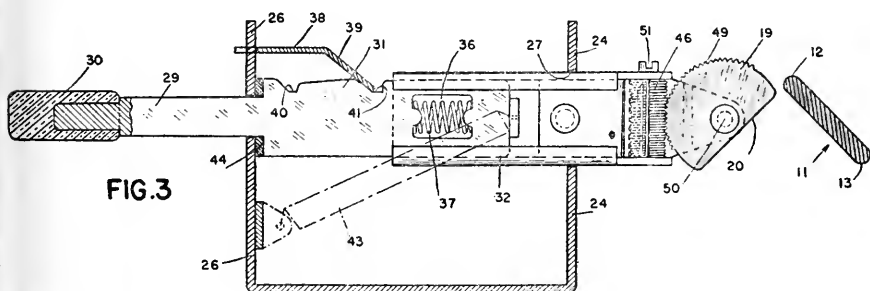


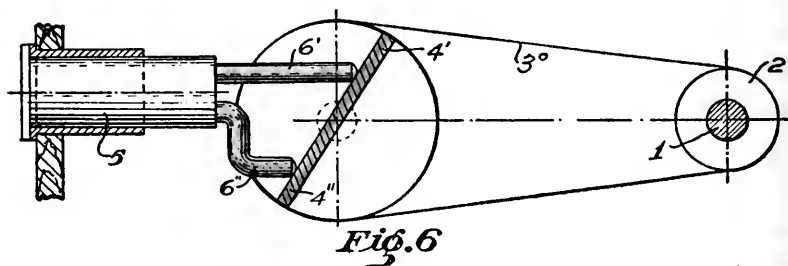
FIG. 3

will assume the same angular position as the adjusted tappet, and the station for which it was adjusted will again be tuned in.

Inasmuch as Lane and Mackey's tappet is never free to turn, the difficulties exhibited in Marchalk's tuner are avoided. But the adjustment of Lane and Mackey's tappet is clearly a slow and laborious process.

2. Soffietti's Rocker and Tappet Tuner Was Very Difficult to Adjust.

The Soffietti Patent No. 2,388,581 [Deft. Ex. J], is in the record beginning at page 838. As shown on the patent itself, Soffietti's original application was filed in Luxembourg on January 25, 1938, before the issuance of defendant's patent that was re-issued as the patent here in suit. Soffietti's Fig. 6 is reproduced below.



Soffietti's rocker has been colored green, and it will be noted that he uses two different tappets (colored red), *each* of which has to be independently adjusted in accordance with the angular position of the rocker.

As can be seen in Fig. 1 of Soffietti's patent, his tappets 6' and 6'' are screws. The distance that each one protrudes from the button 5 can therefore be varied by screwing them out or in. It will be obvious that the lower tappet 6'', Fig. 6, cannot be rotated for this purpose unless the upper tappet 6' is first retracted so that it will not be in the way of the off-set portion of tappet 6'' when the latter is turned. In adjusting these tappets for a given station, the following procedure must therefore be followed: First

the upper tappet 6' must be retracted. Second, the lower tappet 6'' must also be retracted. Third, the station must be tuned in by the manual knob (not shown), so that the rocker, colored green, will assume the corresponding angular position. Fourth, the lower tappet 6'' must then be screwed out so that when the off-set portion is down, as shown in the figure, it will just engage the rocker. And fifth, the upper tappet 6' must be screwed out until it also engages the rocker.

Soffietti of course avoids any creeping difficulties, but his apparatus is far too tedious to adjust to be of any commercial value.

3. The Zenith Corporations' Schaefer Tuner Required 18 Extra Parts.

Another of the six inventors who tried, before Leishman's patent was granted, to turn radio control shafts to predetermined angular positions by means of adjustable tappets, was Schaefer. His patent, No. 1,906,106, appears at page 789 of the record, and commercial models of his tuners are in evidence as Defendant's Exhibits H and I. The Zenith Radio Corporation used Schaefer's mechanism in some of its sets around 1927 and 1928, but it disappeared from the market after a year or two [R. 147-148].

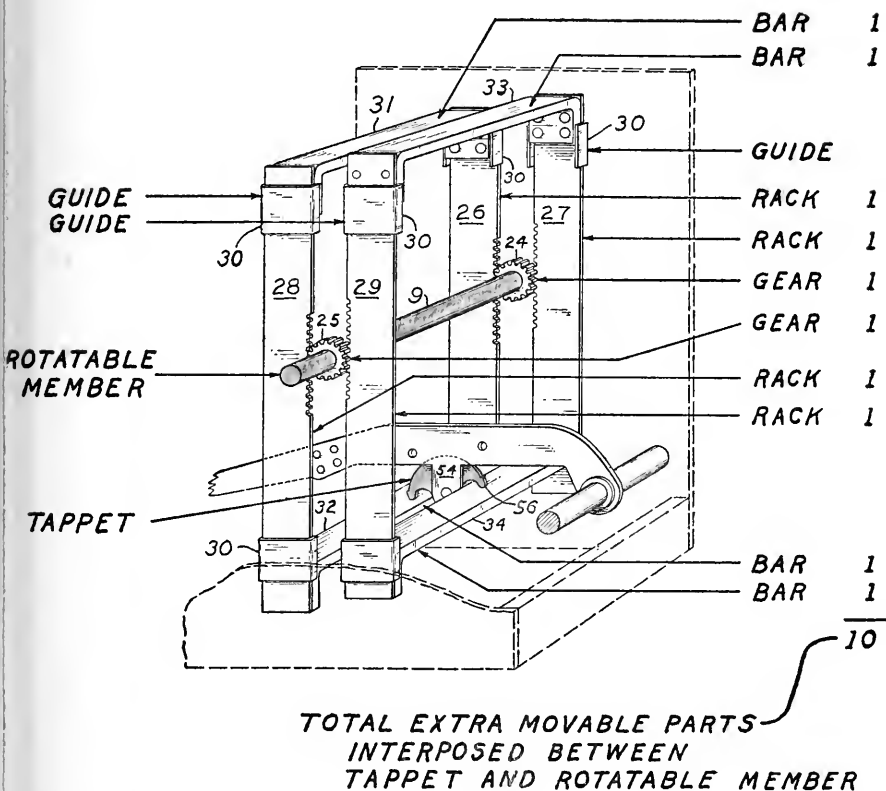
Defendant explained at the trial [R. 143-148] how Schaefer avoids the difficulties that are illustrated in the Marschalk mechanism by interposing 10 movable parts between his adjustable tappet and the rotatable member that is to be angularly positioned. These ten movable parts require eight guides.

The rotatable member of the Schaefer mechanism, corresponding to the rocker of Woodbridge, Marschalk,

Soffietti, and Lane and Mackey, is the shaft 9, Figs. 1, 3 and 4. His tappet 56 may be seen attached to the plunger 54 that extends downward from the lever 41 in Fig. 3 [R. 790]. In order that the court may readily identify the ten extra parts with the eight guides that Schaefer interposed between this tappet 56 and the rotatable member 9, a perspective drawing of a portion of Schaefer's mechanism is provided on page 27 hereof. Most of the extra parts may be seen on this drawing without the necessity of referring to several different figures. On opposite ends of the rotatable member 9, two gears 24 and 25 are rigidly mounted so that they turn with the shaft. Two racks, 26 and 27 are arranged so that their teeth mesh with gear 24. Two guides or ways 30 (Schaefer calls them "ears") are provided for each of these racks, but the two lower guides are not visible in this view. Two other racks 28 and 29 mesh with the other gear 25. Each of these racks also has two guides 30, one at the top and one at the bottom. The upper end of rack 26 is connected to the upper end of rack 28 by a cross bar 31. Another similar cross bar 32 connects the lower ends of these two racks. The other two racks 27 and 29 are similarly connected at the top and bottom, respectively, by cross bars 33 and 34. This construction provides two frames that simultaneously move up or down in opposite directions as the gears rotate.

Schaefer's tappet 56 (or "rocker" as he calls it) engages the two lower cross bars 32 and 34 of these two frames. When any lever is pressed down, these frames will move up or down to positions that are determined by the adjustment of the tappet 56 on the plunger 54 extending from that particular lever, and as the racks of these frames mesh with the gears 24 and 25 on shaft 9, this

SCHAEFER TUNER
WITH PORTIONS OMITTED
TO SHOW EXTRA PARTS
THAT PREVENT CREEPING



shaft will assume an angular position in accordance with the angular position of the tappet.

Schaefer's tappet, cam or adjustable rocker (whatever one wishes to call it) is easy to adjust and none of the difficulties manifest in the Marschalk device is encountered. But Schaefer uses 18 extra parts to avoid this peculiar behavior, and instead of transferring the angular position of his tappet directly to the rotatable member that is to be angularly positioned, he transmits the neces-

sary movement through the intervening 10 of these 18 additional parts [R. 145-146]. The ten intervening movable parts are the four racks 26, 27, 28 and 29; the four cross bars 31, 32, 33 and 34; and the two gears 24 and 25. The eight guides are of course the "ears" 30—two for each rack.

The Schaefer device was a product of the Zenith Corporation Laboratories. It will be remembered from one of the opening paragraphs of this memorandum that Zenith was one of the first companies to undertake to solve the problems of automatic tuning. The Heath Patent [R. 800], which was filed in 1924, belonged to Zenith, and the Schaefer application was filed four years later [R. 789].

4. The General Motors Rotatable Tappet Tuner Also Involved the Interposition of Extra Parts.

The engineers of the Delco Radio Division of General Motors also worked on the problem of positioning a radio control by means of adjustable tappets. Regarding the project that culminated in the original General Motors adjustable tappet tuner, Plaintiff's Exhibit 3 (later discarded in favor of appellant's structure), plaintiff's expert, Schwarz, explained [R. 410]:

"We started work on this in the latter part of 1936 or the first part of 1937, on the idea of mechanical push button tuners and electrical push buttons for automobile radios."

Between 1936 and the time the Exhibit 3 tuner went into production in 1938 [R. 410], design work on automatic tuners was carried on at the Delco Radio Division by James G. Funk [see Pltf. Ex. YY, R. 31], Howard

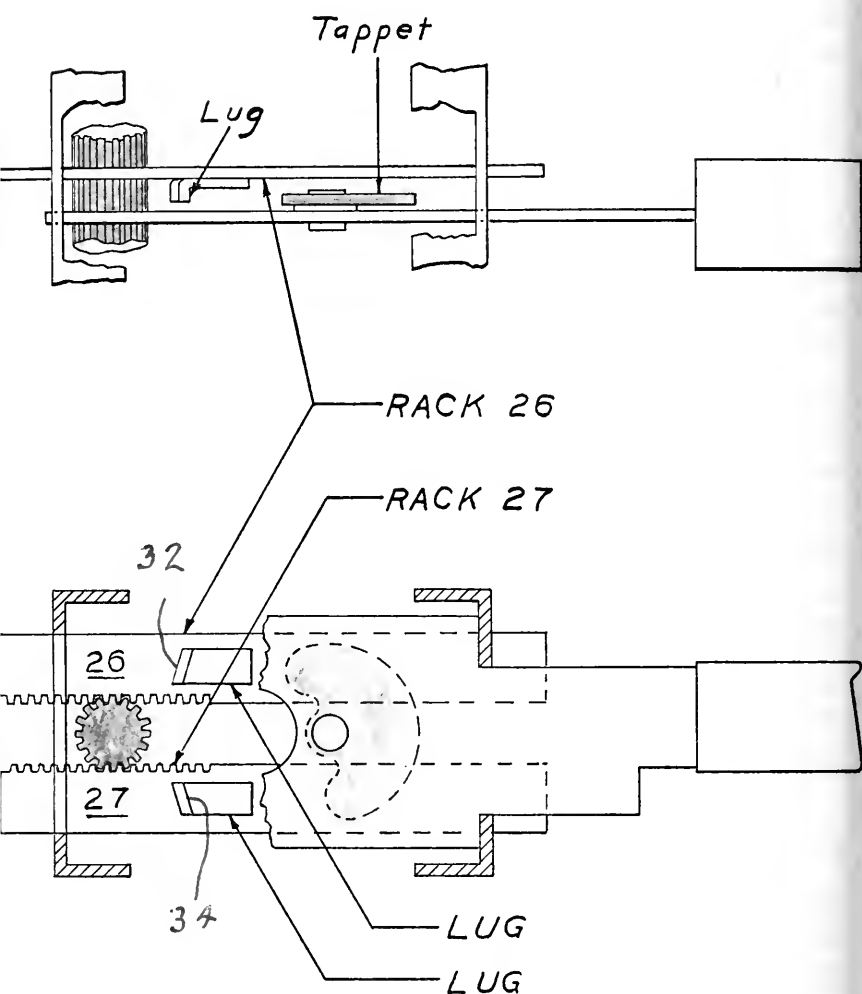
M. Stelzl [Answers to Interrogatories 10 and 12, R. 31-32], William C. DeRoo [Answers to Interrogatories 16 and 18, R. 32-33], and Raymond A. Shuttleworth [Answers to Interrogatories 19 and 20, R. 33], but the final product that went into production was largely devised by Mr. Schwarz [R. 336], who was chief engineer [R. 329].

This final product, Plaintiff's Exhibit 3 tuner, uses adjustable tappets; but instead of these tappets directly engaging the rotatable member as in the Marschalk, Lane & Mackey, and Soffietti tuners, there are four extra parts operatively interposed between each tappet and the rotatable member. In the Zenith-Schaefer tuner, there were ten movable parts operatively interposed between any tappet and the rotatable member, these extra parts requiring eight guides. Mr. Schwarz's simpler arrangement is illustrated on page 30. The rotatable member is the pinion, or gear, shaft shown in green. Unlike Schaefer, Schwarz uses a separate pair of racks for each button or station. One set of racks, 26 and 27, together with the associated manual operating member and tappet, are shown in the figure.

Schwarz explained that General Motors thought it had made an improvement over Schaefer by reducing the number of parts through which the motion is transmitted from the tappet to the rotatable member, or pinion shaft. He testified [R. 337-338]:

“* * * We felt at liberty with our design, *with what we considered some improvements*, because of the existence of the Schaefer tuner, *which we studied at the time* and knowing it was available to us. You have [in the Schaefer tuner] just the two racks on this side and two racks on that side, cooperating by connecting bars, whereas on *our* tuner we have *sepa-*

TOP VIEW



rate racks for *each* station, that is, a rack here and a rack there (indicating), and then when you push each one you move *the single pair of racks*. And you have a single pinion going through just as you have a single pinion going through on that one [Schaefer's], or a pinion shaft." (Emphasis added.)

Each of these racks has a lug, or angle bracket, welded to it. The lug on the rack 26 has a projecting portion 32, and the lug on the lower rack 27 has a projecting portion 34. The left end of the operating plunger is broken away in the lower figure to show these lugs more clearly. The tappet (red) is pivoted to the plunger, but is positioned on the opposite side of the plunger from that facing the reader in the lower view. The adjusted tappet may of course be clamped in adjusted position, but the locking or clamping mechanism has been omitted from these figures because we are not concerned with them here. When the button or plunger is pressed in, the tappet (red) will engage the projecting portions of the lugs, as will be evident from the top view. Inasmuch as the lugs are welded to the racks, you move a pair of racks every time you press a button, as Schwarz explained in the foregoing quotation from his testimony.

In this Plaintiff's Exhibit 3 tuner, which was the result of research begun by the General Motors engineers in 1936, there were thus *two* racks and *two* lugs for *each* tappet, and the movement of any tappet had to be transmitted through the associated pair of racks and lugs before reaching the rotatable member. The peculiar flipping around of the tappet (creeping) exhibited in the Marschalk tuner during the adjusting process, of course does not occur in this development of General Motors; but in a *five* button tuner, there are *ten* racks and *ten* lugs—*twenty extra parts*.

D. Appellant's Solution Was Simple and Eminently Satisfactory.

We have discussed five different tuners using adjustable tappets that were developed before Leishman's original patent issued on February 15, 1938. The purpose of the adjustable tappet, of course, is to position the rotatable member.

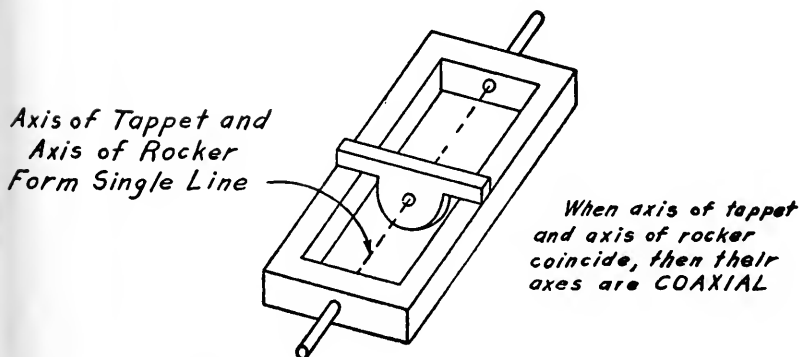
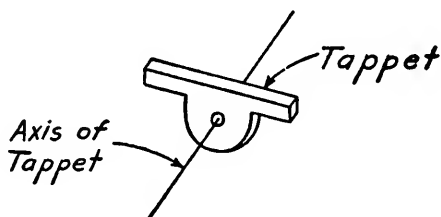
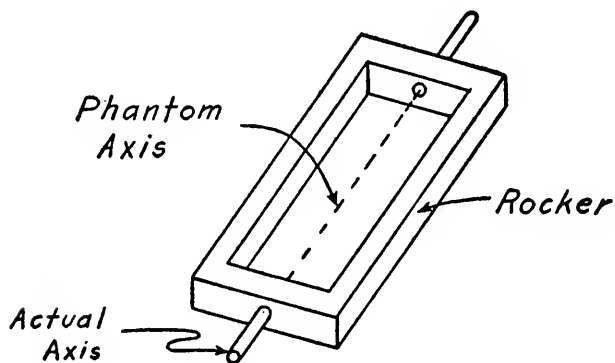
Marschalk brought his adjustable tappet into direct engagement with the positionable rotatable rocker, but serious difficulties arose when his freely pivoted tappet was brought into engagement with the tilted rocker during the adjusting process.

Soffietti also brought his adjustable tappet arrangement into direct contact with the angularly positionable member, and so did Lane and Mackey; but these two tuners avoided the difficulties exhibited in Marschalk's mechanism by providing tappets that were *never* freely pivoted, but which were very difficult and tedious to adjust.

In both the Zenith-Schaefer tuner and the General Motors rack tuner, the tappets were freely pivoted during the adjusting process as in the Marschalk tuner, but the Schaefer and General Motors tuners avoided creeping by interposing extra parts between the tappet and the rotatable positionable member.

Defendant's solution of the problem was very simple, and did not add any extra parts. Like Marschalk, Soffietti, and Lane and Mackey, Leishman used a tappet that directly engaged the rotatable member, but he concluded that the difficulty encountered in this type of structure could be avoided if the axis of the tappet were made coincident with the axis of the rotatable member, or rocker,

when these two parts are in full engagement. Inasmuch as two solid bodies cannot both occupy the same space at the same time, the idea of coincident axes involved providing one of those members with a phantom axis—that is,



having an open space where the axis comes. The rockers of Marschalk, Soffietti and Lane and Mackey, were all solid, and in the Woodbridge cash register a solid shaft extended down the center of the rocker between the side bars. It is obviously immaterial whether the phantom axis is in the rocker or the tappet, but Leishman arranged it in the rocker, which accordingly has an opening in the middle. This is illustrated in the reproduction of Defendant's Exhibit L-4 on page 33. Then he shaped the tappet so that its pivot would set right down inside the rocker in such a way that its axis of rotation would come exactly in line with the axis of rotation of the rocker. The axes of rotation of these two elements then became coincident, or *coaxial*; in other words, they are *on the same line*.

In order that the court might examine the action of the tappet and the rocker more closely, as well as to permit a closer observation of the coaxial relationship, Mr. Leishman prepared a special model with removable parts designated Defendant's Exhibits L, L-1, L-2 and L-3. The rocker L-1 may be placed on the base L so that its axis rests in the grooved supports provided on the base. The tappet L-2, mounted on a short handle, is cut away so that its axis may be moved down inside the rocker. When the tappet is brought into engagement with the rocker by way of the guides that protrude up through the rocker from the base, it will be observed that the axis of the tappet is exactly in line with the axis of the rocker. These axes are then *coincident*, or *coaxial*. The tappet may be lifted up and the rocker tilted to either extreme angular position; and when the tappet is again brought down, there is no tendency for the rocker to turn no matter how much pressure is exerted.

A second tappet, L-3, has been provided, but this L-3 tappet has not been shaped with respect to the rocker for the purpose of providing a coaxial relationship. When this *non-coaxial* tappet is brought into engagement with the *tilted* rocker, it will be observed that the rocker will immediately turn, as in the Marschalk model.⁴

Utilizing this simple relationship of the tappet and rocker, the tappet in an automatic tuner can be loosened and moved into direct engagement with the rocker when the latter is tilted, and the tappet will assume the angular position of the rocker without the slightest tendency for them to turn together no matter how hard one presses on the manual operating member. A model of Leishman's

⁴In the *Associated* case, Judge Harrison apparently misunderstood the nature of the coaxial relationship which these illustrative models clearly show. He was under the impression that the tappet would just naturally become coaxial with the rocker if the tappet were operated by a plunger. He said (36 Fed. Supp. 804 at 809):

"* * * it seems to me that it would have been very difficult to use a push button or plunger that would not have to pass through the rocker, when the rocker and tappet were brought into full engagement. It was the natural thing to do and in so doing the parts became coaxial."

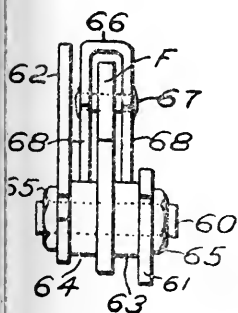
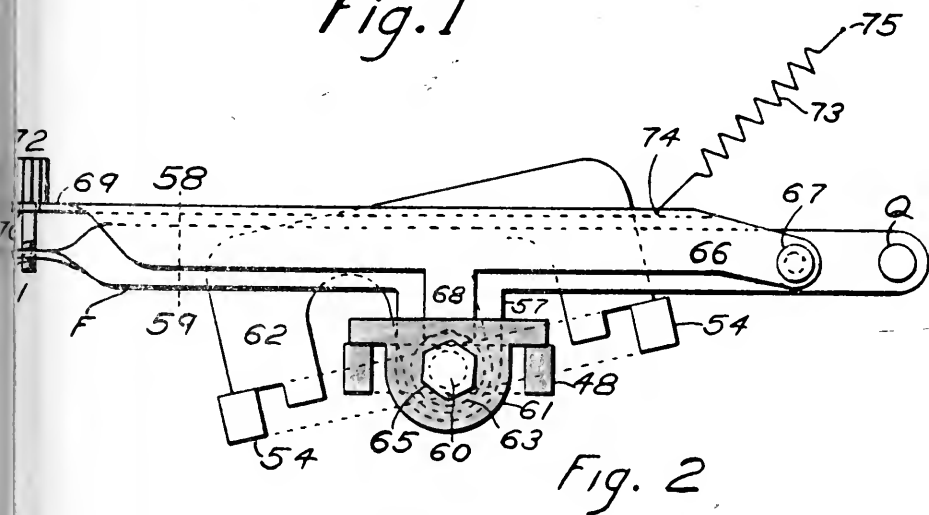
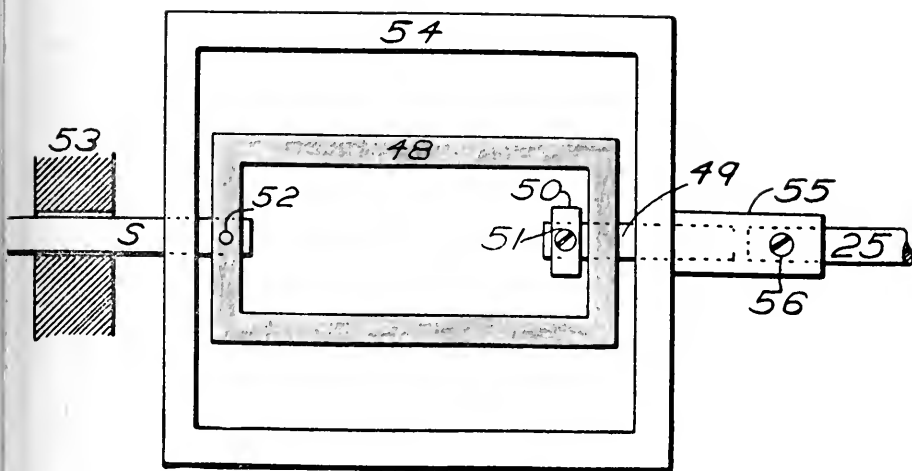
This statement contains three demonstrable errors. In the first place, it is not at all difficult to use a push button or plunger that would not have to pass through the rocker. Soffietti [R. 838, Fig. 6] and Lane and Mackey [R. 842, Fig. 3] used plungers that did not pass through the rockers, and the plunger in one of the plaintiff's tuners involved in the present action [Pltf. Exs. LL and NN] likewise does not pass through the rocker. In the second place, passing the plunger through the rocker is *not* the natural thing to do. No one thought of doing it until there had been an opportunity to examine Leishman's arrangement. And in the third place, the passing of the plunger through the rocker does *not* make these parts *coaxial*. If the non-coaxial tappet L-3 is placed in position above the rocker L-1, it can readily be seen that the mere extension of the handle or plunger through the rocker would not make these parts coaxial. Coaxiality is not achieved unless these parts are especially shaped with respect to each other with the idea of a coaxial relationship definitely in mind, as demonstrated by the L-2 tappet which is shaped so that its axis can come into exact alignment with the axis of the rocker.

tuner [Deft. Ex. M] was introduced at the trial, and he demonstrated [R. 162 and 163] that “you can put the rocker in any position you desire and bring this [the tappet] down and there isn’t the slightest tendency for the tappet to turn.” [R. 163]. The tappet can thus be accurately adjusted without all the difficulties manifest in the Marschalk mechanism, without the tediousness that makes the Soffietti and Lane and Mackey devices hopelessly impractical from a commercial standpoint, and without the eighteen extra parts required in the Zenith-Schaefer device, or the twenty extra parts (ten racks and ten lugs) needed in a five button tuner like General Motors’ Exhibit 3.

Having solved the problem of how to make a rocker and tappet combination in which the tappet was easily and accurately adjustable, defendant arranged to combine two sets of these elements in such a way that a single manually operable member could simultaneously move two different tappets each into engagement with a different rocker. This double arrangement made it possible to perform two different tuning operations at the same time. For instance, the sound and the picture for a television program could be sent out on totally unrelated wave-lengths or frequencies, but these two parts of the program could nevertheless be tuned in by a single manual operation.

Leishman’s mechanism was described and shown in his original patent No. 2,108,538 [R. 770], as well as in the re-issue of this patent [R. 775], *the drawings and the specifications being absolutely identical in both documents.*

For the convenience of the court, the patent drawings have been reproduced on page 37 of this brief. Fig. 2 shows the tappet 61 (colored red) in full engagement with the rocker 48 (colored green), the latter being connectible



INVENTOR.

Le Roy J Leishman

to a radio broadcast receiver by means of the shaft S, Fig. 1. It will be noted that Fig. 2 clearly shows the coaxial relationship. The patent points out (page 1, column 1, lines 28 to 30) that another object of the invention is "to make it possible for a single manual operation to tune either a radio set or a television set, or both; . . ." Tappet 62 and rocker 54 may be used for television; but inasmuch as we are here concerned with radio only, the extra tappet and rocker may be disregarded.

In addition to illustrating the coaxial relationship in the drawings, Leishman succinctly described it in the specification. This verbal disclosure will be found in both the original and re-issue patents on page 2, column 1, lines 30 to 34, where the specification reads:

"When the lever assembly is all the way down, it will be observed from Fig. 2 that the pin 60 [around which the tappet is pivoted] is substantially *coaxial* with the rockers 48 and 54, which means that in this position it is also *co-axial* with shafts S, 49 and 25, shown in Fig. 1." (Emphasis added.)

During the prosecution of appellant's original patent, he called the attention of the Patent Office to the fact that the construction just described arrived at Schaefer's result with 18 less parts. This was done in a letter dated August 28, 1937, which appears in the file wrapper [Deft. Ex. P]. Leishman stated:

". . . no engineer would use eighteen inter-related parts if ordinary engineering skill would make it obvious that one part would do the work. Furthermore, thousands of Schaefer's devices were manufactured and widely used, and engineers were employed to simplify the construction. This is additional evidence that applicant's improvement is an invention

entitled to protection within the scope of the claims.”
[R. 1023.]

The Patent Office thought so too.

“Cheapness of construction, simplicity of construction, and operation and ease of operation as compared with prior structures are all indications of invention.”
Walker on Patents, Deller’s Edition, Vol. 1, p. 189.

When Leishman told the Patent Office in August, 1937, that “thousands of Schaefer’s devices were manufactured and widely used, and engineers were employed to simplify the construction” he did not know that engineers were even then being employed at General Motors for that very purpose, these engineers being unaware that the problems had already been solved.

General Motors’ improvements over Schaefer fell far short of Leishman’s. This great corporation, which knows a good thing when it sees it, has accordingly abandoned the results of its own research [R. 336] and adopted Leishman’s construction. General Motors’ engineer Schwarz admitted that *one million* tuners with coaxial tappets and rockers had been used prior to the time of the trial [R. 414-415] in Chevrolet, Pontiac and Buick cars alone.

Beginning in 1938, after a knowledge of appellant’s structure became available to the public, one manufacturer after another placed tuners upon the market containing tappets and rockers that were coaxial in the completely engaged position [R. 220-230]. Household sets using this construction included the following [R. 655-656]:

Crosley sets, manufactured by The Crosley Corporation;

Emerson sets, manufactured by Emerson Radio Corporation;

Packard-Bell sets, manufactured by Packard-Bell, Los Angeles;

Mission-Bell sets, also manufactured in Los Angeles;

Gilfillan sets, manufactured by Gilfillan Bros., Inc., of Los Angeles;

Sets made by Radio Corporation of America;

Trav-ler sets;

Silvertone sets, made for Sears-Roebuck by Colonial Radio Corporation;

Arvin radio sets, made by Noblitt-Sparks;

Admiral radio sets, made by Continental Radio and Television Corp.;

Magnavox radios;

Stromberg-Carlson radio receivers;

Detrola radio receivers;

Radio receivers made by Clinton Manufacturing Co., of Chicago;

Radio receivers made by Warwick Mfg. Co. of Chicago;

Stewart-Warner radio receivers;

De Wald radio receivers; and

Troy radio receivers.

In the automobile field, appellant's tuner has been equally successful. His coaxial tappet and rocker construction is used in more automobiles than are factory-equipped with radios than all other types combined.

The line of Chrysler cars that were current at the time of the trial, used two different types of tuners, one of which was of the coaxial tappet and rocker construction. This tuner [Deft. Physical Ex. AAA] is described in the folder identified as Defendant's Physical Exhibit BBB, which says that the said tuner is used in the current *series* of Plymouth, Dodge, DeSoto and Chrysler passenger cars and Dodge trucks, as well as in the 1941 and 1942 models of these cars.

At the time of the trial, current models of Hudson, Mercury and Lincoln cars and Ford trucks were using the tuner identified as Defendant's Physical Exhibit GGG. This is a coaxial tappet and rocker tuner manufactured by Zenith Corporation. The use of this tuner in the Hudson car is confirmed by the factory folder introduced as Defendant's Physical Exhibit CCC, and the use of the same tuner in Ford trucks is confirmed by the service manual in evidence as Defendant's Physical Exhibit DDD. The service manual identified as Defendant's Physical Exhibit EEE verifies that the same tuner is used in Lincoln and Mercury cars.

The Zenith Corporation, which manufactures the tuners just mentioned for Hudson, Ford, Mercury and Lincoln, has had longer and wider experience with automatic tuners than any other manufacturer; and its final conclusion as to their relative merits consequently has great weight. It was Zenith that fought the long interference over the Heath patent that was applied for in 1924 [R. 800]; it was Zenith that manufactured the Schaefer tuner with the

18 extra parts that avoided creeping. After appellant's simpler construction became available, Zenith purchased coaxial tappet and rocker tuners from Leishman's licensee [R. 225-226], and a tuner of this type especially made for Zenith and bearing the number of the patent here at issue is in evidence as Plaintiff's Physical Exhibit FF. Zenith later experimented with other types, but then began manufacturing the coaxial tappet and rocker tuner just discussed for Hudson, Ford, Lincoln and Mercury. On May 1, 1948, just before the trial of this suit, Zenith issued a bulletin about this tuner [R. 1140], saying: "The new 1948 line of Zenith auto radios employs a simplified push-button system of automatic tuning in place of the solenoid driven turret mechanism used in previous models. *This system is so simple and fool proof, that complete replacement should seldom, if ever, be necessary.*"

Seldom in the history of the patent system has there been such immediate and widespread adoption of a new invention. Appellant thus succeeded well in achieving the object set forth in his original and reissue patents [R. 771 and 777, column 1, lines 30-33]: "*to afford means whereby the apparatus may easily be adjusted* so that a definite manual operation will cause the desired rotatable element to be turned to a desired position." After ten years it is still preferred, because "This system is so simple and fool proof"—to use the words just quoted from the Zenith announcement.

III.

SPECIFICATION OF ERRORS RELIED UPON.

1. The district court erred in finding that claims 7, 8, 9, 10 and 11 of United States Reissue Letters Patent No. 20,827 are invalid and void.

2. The district court erred in making Finding 8 to the effect that "Every element, feature and mode of operation of the tuner of the patent in suit is anticipated in the light of the teachings of Marschalk, Patent No. 2,072,897 and Schaefer, Patent No. 1,906,106."

The Marschalk device referred to in this finding is the one that was used at the trial to demonstrate the very difficulties that everybody had to solve (see p. 19 hereof), and the Schaefer patent is the one that discloses the Zenith device [Defendant's Physical Exhibit H] in which ten movable parts were interposed between the adjustable tappet and the rotatable element that is to be positioned. These ten movable parts had eight guides. The statement that "Every element, feature and mode of operation of the tuner of the patent in suit is anticipated in the light of the teachings of the Marschalk Patent No. 2,072,897 and Schaefer, Patent No. 1,906,106," is thus obviously in error.

3. The district court erred in stating, in Finding 9, that "the co-axial characteristic of the patented tuner is anticipated by said Schaefer patent"

It should be obvious from a casual glance that there is no coaxiality in the Schaefer mechanism. (See p. 27 hereof.) The Schaefer tappet 56 of course has an axis at the pivot 55. The only other axis in the Schaefer mechanism is the axis of the shaft 9 shown in Schaefer's pat-

ent in Figs. 3 and 4 [R. 789-790]. But these axes are far from *coincident*, or *coaxial*. The axis 55 of the tappet 56 and the axis of the shaft 9 are more than $1\frac{1}{2}$ inches apart even in these patent drawings. The perspective drawing of certain parts of the Schaefer mechanism on page 27 hereof may also be helpful in showing the wide separation of these axes of rotation, which are the only such axes in the Schaefer structure. Any reference to a coaxial characteristic in the Schaefer tuner, such as the reference in Finding of Fact 9, is thus manifestly in error. The axis of Schaefer's tappet, instead of being coaxial with the axis of the rotatable member 9, was widely separated therefrom.

4. The district court erred in stating, in Finding 9, that the "function and mode of operation" of the Schaefer device "is identical with that of the patented tuner."

Schaefer's "mode of operation" in the elimination of creeping is entirely different from, rather than identical with, that of the patent in suit. That Schaefer eliminated creeping by the interposition of 10 movable parts between his tappet and rotatable member, was thoroughly demonstrated at the trial [R. 143-148] and the testimony was not disputed.

5. Findings 8, 9 and 10, and the portions of the opinion upon which they are based, have no support whatever in the record, and are contrary to all the expert testimony with respect to the Schaefer and Marschalk devices, which said testimony was undisputed.

6. Findings 10, 11 and 12, together with the portions of the opinion upon which they are based, are unwarranted assumptions unsupported by the record.

7. Finding 13 is both incorrect and irrelevant (1) because the Cunningham mechanism is a device for recording the amount of flue gas in a container and is completely non-analogous, (2) because parts of the Cunningham device that were essential to its normal mode of operation were omitted from the model alleged to represent the Cunningham mechanism, (3) because the part which appellee calls the "tappet" in the Cunningham device, never has to be set to conform to the angular position of the rocker, (4) because the method by which appellee's expert endeavored to set the so-called tappet in the model was entirely different from the method that needed to be employed in Cunningham's device, and (5) because the problem that was solved by the patent in suit was one that never arose in the non-analogous art to which the Cunningham device belongs. Appellee's own expert MacKeown admitted most of these things in his cross-examination.

8. Finding 14 is in error for the reason that the Cunningham patent is from a different and non-analogous art not encountering the problem that was solved by the patent in suit.

9. Finding 15 is clearly in error, because a device from a non-analogous art having different problems does not anticipate, especially where its structure has to be altered and its normal mode of operation changed to make it appear pertinent.

10. The court erred in stating in Finding 16 that "Were Leishman the first to advantageously employ the mechanical principle of coaxiality in the function of radio tuning devices such employment would be nothing more than a new use *per se*." If this finding is meant to imply

that appellant's use of this relationship for a totally new purpose would render his combination unpatentable, then this finding is contrary to all pertinent law. As this Honorable Court said in *Pointer v. Six Wheel Corp.*, 177 F. 2d 153, 160, “. . . invention cannot be defeated merely by showing that, in one form or another, each element was known or used before.” (Citing many decisions.)

11. The court erred in not holding that the claims at issue are valid.

12. Inasmuch as Judge Mathews, writing for the court in *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722, 727, 728, *specifically wiped out the lower court's holding that the claims here at issue were invalid for want of invention*, the district court in the instant case erred in stating that “there are rather significant expressions in the opinion of Judge Mathews, writing for the court in *Leishman v. Associated Wholesale Electric Co.*, *supra*, that induce at least a surmise that our own Appellate Court had its misgivings as to any inventive qualities in the claims of the patent in suit.” The portion of the *Associated* decision which the lower court quoted in support of this statement, makes no reference whatever to the subject of invention.

13. The district court erred in attaching so much weight to the opinion of the Court of Appeals for the Tenth Circuit in *The Richards and Conover Company v. Leishman*, *supra*, which said Court of Appeals was demonstrably in error in reversing the U. S. District Court for the Western District of Oklahoma in its holding that the claims here at issue are valid.

14. The district court erred in denying both Defendant's Motion under Rule 52b to Amend the Findings,

Conclusions and Judgment, and Defendant's Motion for a New New Trial under Rule 59.

15. Inasmuch as the final opinion of the Court of Appeals for the Tenth Circuit in *The Richards and Conover* case, rendered subsequent to the trial herein, was based upon new grounds raised *for the first time* in the said appellate court's own opinion, the district court in the instant case was wrong in refusing to grant a new trial for the purpose of introducing evidence to show that said *new* grounds were baseless and should not be followed here.

16. Inasmuch as Defendant's Motion for a New Trial was supported by affidavits from the professors of mechanical engineering at California Institute of Technology and the University of Southern California, and also from the head of Engineering Research, Department of Engineering, at the University of California at Los Angeles, which said affidavits unanimously stated that the opinion of the Court of Appeals for the Tenth Circuit, *supra*, was based upon erroneous conceptions of mechanical principles and faulty drawings, the district court in the instant case should have granted the defendant a new trial to permit him to present evidence to refute the erroneous conclusions of the Court of Appeals for the Tenth Circuit with respect to invention, which conclusions have improperly been adopted herein.

17. The district court erred in not deciding the issue of validity according to the formulas recommended by the Supreme Court and by this Honorable Court of Appeals for the Ninth Circuit.

18. The district court was wrong in stating, in its opinion, that the defendant argued that the court should broaden the claims to cover tuners not operated by levers,

whereas, actually, the defendant constantly and consistently argued that the claims should not be narrowed to lever-operation, and should be interpreted literally. As the Court of Appeals for the Tenth Circuit said in *The Richards and Conover Company v. Leishman*, 172 F. 2d 365, 368:

“However, claims 7 to 11, inclusive, embrace a single rocker and corresponding adjustable tappets mounted on pivots, means for moving each tappet so one of its sides engages one arm of the rocker and rotates the rocker until the other side of the tappet engages the other arm of the rocker, and *they do not specifically embrace a lever means for carrying and moving the tappets.*” (Emphasis added.)

19. The court erred in not holding that both of the plaintiff’s accused tuning devices are infringements of the claims here at issue.

IV. ARGUMENT.

A. Introduction to the Argument.

The present record is full of evidence of the long failure of skilled workers to arrive at appellant’s simple solution of the creeping problem. The Supreme Court says that such failure is evidence of invention. In *Remington Rand Business Service, Inc. v. Acme Card System Co.*, 71 F. 2d 628, 632, the Court of Appeals applied and explained this Supreme Court formula as follows:

“This history is persuasive, for Rand, *who is well described as a ‘man skilled in the art,’ failed to obtain the excellent results which Powell achieved.* We have no difficulty in approving the conclusion of the

District Judge that Powell's discovery amounted to invention. *The decisions of the Supreme Court and of the several circuits are replete with illustrations of similar situations in which it has been held that one who in the practical application of an art has found that which eluded the search of other skilled men is entitled to the grant of a patent.* Diamond Rubber Co. v. Consolidated Tire Co., 220 U. S. 428, 434, 31 S. Ct. 444, 55 L. Ed. 527; United States Industrial Chemical Co. v. Theroz Co. (C. C. A.) 25 Fed. (2d) 387; Gulf Smokeless Coal Co. v. Sutton, Steel & Steele (C. C. A.) 35 F. (2d) 433; Julius Levine & Co. v. Automatic Paper Machinery Co. (C. C. A.) 63 F. (2d) 547; Wahl Clipper Corporation v. Andis Clipper Co. (C. C. A.) 66 F. (2d) 162; White Co. v. Converse (C. C. A. 20 F. (2d) 311; Johnson v. Forty-Second Street, M. and St. N. Ave. R. Co. (C. C.) 33 F. 499, 501." (Emphasis added.)

Recognizing substantially the same test, this Honorable Court of Appeals for the Ninth Circuit expressed itself as follows in the *Six Wheels* case, *supra*, at page 160:

"A test which has been found very useful and generally followed is that adverted to by Mr. Chief Justice Taft in the case just referred to,—namely, the discovery of the source of the difficulty and the application of a remedy not thought of before. Eibel Process Co. v. Minnesota and Ontario Paper Co., *supra*, 261 U. S. at page 66."

It has already been amply demonstrated that appellant was the one who discovered the real source of the "creeping" difficulty and applied a remedy *not thought of before*.

When the lower court rendered its decision in the instant case, this Honorable Court had not yet given its

opinion in the *Six Wheel* case, but the same doctrine there expounded had already been well established in this circuit as shown in *Johnson Co. v. Philad Co.*, 96 F. 2d 442, where the following appears at page 444:

“The evidence shows that the Mayer process solved the problem confronting hair dressers by providing a practical method of applying a permanent Croquignole wave to the human head. As we have said, the essence of the invention was applying clamps to the hair before winding. *Although this step was simple, it apparently was not obvious to those skilled in the art of hair dressing and the introduction of the patented method met with immediate and substantial commercial success. Solving such a problem in a practical manner constitutes invention.* (Emphasis added.)

Why didn't the lower court apply these tests to the long failure of others in the instant case? The lower court does not make it clear whether it understood the problem involved in providing a simple, adjustable tappet tuner, and that the practical solution was found in making the rotational axis of the tappet coaxial with the axis of the rotatable member that is to be positioned. Nowhere in the opinion is it mentioned that Leishman was striving to provide a simple tuner that was easy to adjust. Nowhere is any reference made to the long failure of others.

It is apparent that the lower court's opinion was influenced primarily by the decision of the Court of Appeals for the Tenth Circuit in *The Richards and Conover* case, *supra*, rather than by the record before it. Scant reference is made in the opinion to the evidence in the instant case. Such reference is confined to the portion of the

decision extending from the bottom of page 46 to the middle of page 48 of the present record; and findings of fact 8, 9, 13, 14 and 15 are based upon this portion of the opinion.

B. The Lower Court Relied Upon the Marschalk, Schaefer and Cunningham Devices as Anticipations of Appellant's Solution, but the Lower Court's Findings With Respect to These Devices Are Clearly in Error.

1. Marschalk, Instead of Anticipating Defendant's Simple Solution, Exhibited the Creeping Difficulties in His Device and Left the Problem Completely Unsolved; and Schaefer, Instead of Anticipating Defendant's Simple Solution, Used 18 Extra Parts for the Purpose.

Finding 8 reads as follows [R. 52]:

"Every element, feature and mode of operation of the tuner of the patent in suit is anticipated in the light of the teachings of Marschalk, Patent No. 2,072,897, and Schaefer, Patent No. 1,906,106."

This finding is based upon a single sentence of the Opinion [R. 46], which reads as follows:

"Moreover, we think independently that under the record before us and in the light of the teachings of the Marschalk Patent No. 2,072,897, and the Schaefer Patent No. 1,906,106, every element, feature and mode of operation of the Leishman combination in suit is anticipated."

Appellant believes that it has been made abundantly clear in foregoing portions of this memorandum that the Marschalk device here referred to was the one that has been used to demonstrate the very difficulties that everybody had to solve, and the Schaefer patent is the

one that discloses the Zenith device [Deft. Physical Ex. H] in which ten movable parts were interposed between the adjustable tappet and the rotatable element that is to be positioned. These ten movable parts had eight guides. The statement that "in the light of the teachings of the Marschalk Patent No. 2,072,897, and the Schaefer Patent No. 1,906,106, every element, feature and mode of operation of the Leishman combination in suit is anticipated," is thus so obviously in error that no argument seems necessary to show that such is the case.

If the teachings of Marschalk and Schaefer anticipate every element, feature and mode of operation of appellant's combination, it is difficult to see why General Motors Corporation didn't arrive at the coaxial rocker and tappet structure when it was trying to simplify the Schaefer device. Schwarz stated [R. 337]: "We felt at liberty with our design, with what we considered some improvements, because of the existence of the *Schaffer tuner*, which we studied at the time and knowing it was available to us." There is thus no question but what the General Motors engineers had the light of the teachings of the Schaefer patent shining right on their drafting boards.

The Marschalk patent issued on March 9, 1937, while General Motors was struggling with the problem of simplifying the Schaefer structure. Schwarz testified [R. 410]: "We started work on this in the latter part of 1936 or the first part of 1937 . . ." It is inconceivable that the giant General Motors Corporation, when working on a research problem, would not be aware of the patents that were issuing at the time. This Honorable Court knows that it is customary in these patent-conscious organizations to keep abreast of patents issuing in the field of their research. However, if General Motors

did not actually know of the Marschalk patent, it is nevertheless charged with such knowledge.

“Having all these various devices before him, and, whatever the facts may have been, he is chargeable with a knowledge of all preexisting devices. . . .”
Most, Foos & Co. v. Stover Mfg. Co., 177 U. S. 485, 493 (1900).

The Supreme Court also adhered to this doctrine in *Sontag Chain Stores Co., Limited v. National Nut Co. of California*, where the court said, 310 U. S. 281 at page 295:

“All patents must ‘be recorded, together with the specifications, in the Patent Office in books to be kept for that purpose.’ U. S. C. A. Title 35, sec. 39. *Constructive notice of their existence goes thus to all the world.* Boyden v. Burke, 1852, 14 How. 575, 582, 14 L. Ed. 548; Wine Ry. Appliance Co. v. Enterprise Ry. Equipment Co., 1936, 297 U. S. 387, 393, 56 S. Ct. 528, 529, 80 L. Ed. 736; *Walker on Patents, Deller’s edition* (1937) Vol. 3, p. 2176.”
(Emphasis added.)

Even if the Marschalk device had been right in front of Schwarz and his fellow engineers it would not have been in the least helpful. Marschalk used an adjustable tappet, but so did Schaefer. Marschalk thus added nothing over Schaefer in this respect. Marschalk, of course, brings his tappet into direct engagement with the rotatable member, as does Leishman, but that is the way it was always done until Schaefer isolated them and interposed the ten movable parts. The tappet was brought into direct engagement with the rotatable member in the 1883 Kettell clock-setting mechanism described on pages

14 and 15 hereof. The tappet was also brought into direct engagement with the rotatable member in the 1897 Woodbridge cash register mechanism [R. 713] described on page 16 of this memorandum and mentioned in the portion of Judge Harrison's opinion in the *Associated* case, *supra*, quoted on page 17 hereof. Schaefer and the General Motors engineers, in fact, were the only engineers of record that separated the tappet from the rotatable member. The Soffietti and Lane and Mackey devices, which were developed concurrently with the General Motors rack tuner, both brought their tappets into direct engagement with the rotatable member, as shown in the descriptions of their devices in the portions of this memorandum extending from page 23 to page 25.

Nothing in the Marschalk patent teaches that the tappet and rocker must be mutually shaped and arranged so that their axes of rotation become coincident, or coaxial, in the completely engaged position. Nothing in Marschalk's device suggested a solution of the creeping problem to Marschalk himself, for he left the problem completely unsolved.

Finding 8 is thus manifestly in error in its statement that "in the light of the teachings of the Marschalk Patent No. 2,072,897, and the Schaefer Patent No. 1,906,106, every element, feature and mode of operation of the Leishman combination in suit is anticipated."

This completely untenable finding must thus be set aside.

2. Schaefer's Axes, Instead of Being Coaxial, Are Much Further Apart Than Marschalk's; and the Testimony That Schaefer Eliminated Creeping by Interposing 10 Movable Parts With 8 Guides, Was Undisputed.

Finding of Fact 9 reads:

"The coaxial characteristic of the patented tuner is anticipated by said Schaefer patent, whose function and mode of operation is identical with that of the patented tuner."

Perhaps we had better be sure that we know what the terms *coaxial* and *coaxiality* mean. Webster's New International Dictionary, unabridged, defines coaxial as "having coincident axes." Schwarz' understanding of the meaning of the term *coaxiality* is disclosed in the following excerpt from his testimony [R. 428]:

"Q. That is, when there is more than one axis, and they come into alignment, then the relationship between the two axes is that which might be termed coaxiality, is that right? A. Yes, I believe that is the definition."

There must accordingly be *two axes* before there can be coaxiality, and these axes must be *coincident*, or *in alignment*. It should then be obvious from a casual glance that there is no coaxiality in the Schaefer mechanism. Not only is there no "coaxial characteristic" in the Schaefer device, but its method of eliminating creeping is entirely different from, rather than identical with, that of the patent in suit. That Schaefer eliminated creeping by the interposition of 10 movable parts between his tappet and rotatable member, was thoroughly demonstrated at the trial [R. 143-148] and the testimony was not disputed.

The Schaefer tappet, of course, has an axis. The other axis in the Schaefer mechanism is the axis of the shaft 9 shown in Schaefer's patent in Figs. 3 and 4 [R. 789-790]. But these axes are far from *coincident*, or *coaxial*. The axis 55 of the tappet 56 and the axis of the shaft 9 are more than 1½ inches apart even in these patent drawings. The perspective drawing of certain parts of the Schaefer mechanism on page 27 hereof may also be helpful in showing the wide separation of these axes of rotation, which are the only such axes in the Schaefer structure. Any reference to a coaxial characteristic in the Schaefer tuner, such as the reference in Finding of Fact 9, is thus manifestly in error. Schaefer's tappet, instead of being coaxial with the axis of the rotatable member, was widely separated therefrom; in fact, it was by operatively interposing ten movable parts between these two separated axes that Schaefer prevented creeping.

In view of the demonstrated errors in Findings 8 and 9, these findings must certainly be disturbed by this Honorable Court, and the lower court must be reversed in its holding that Marschalk and Schaefer in any way anticipated appellant's coaxial rocker and tappet structure.

3. **The Cunningham Device, Held to Be an Anticipation, Is From a Remote, Non-analogous Art Having Different Problems, and It Cannot Be Made to Function as an Automatic Tuner Without Changes and Omissions Rendering It Useless for Its Original Purpose.**

The irrelevant and non-analogous nature of the Cunningham device, mentioned in Findings 13, 14 and 15, was disclosed by appellee's own expert at the very beginning of his direct examination regarding Cunningham. The second question and answer were as follows:

“Q. Will you please explain the shaft positioning mechanism, if any, in the Cunningham patent? A. Yes. This Cunningham patent is a device for determining the amount of carbon dioxide in flue gas so that automatic determination of the carbon dioxide can be used to record or control the combustion, say in a furnace.” [R. 449-450.]

Such a device is about as foreign to appellant's device as anything could possibly be. Certainly the measurement of flue gas is more remote from radio tuning than was the “bogie,” or railroad, art from the automobile truck art in the *Six Wheel* case, *supra*. Yet this Honorable Court referred to the bogie art as “*a different, non-analogous art, with different problems.*” [177 F. 2d at page 162.]

It was the fact that the bogie art had *different problems* from those that were solved by Knox's device, that made the bogie art *non-analogous*.

We can immediately determine whether the Cunningham device has any pertinence by ascertaining whether it was a mechanism that encountered the problem that appellant solved. Was it a device in which parts tended to move when there should be no rotation at all? Was the unwanted movement eliminated by making the axes of the offending parts coaxial?

The unwanted movement in a radio tuner occurs during the adjusting process when the loosened tappet is being adjusted to the position of the rocker. Appellee's expert Mackeown found parts in Cunningham's device [R. 742] that bear a superficial resemblance to a tappet and rocker. Moreover, this “tappet” has to be adjusted. But this “tappet” is *never* adjusted to the position of the rocker. It is adjusted to conform to the position of a float that is

raised by the pressure of the flue gas, and this adjustment must take place while the "tappet" is raised out of engagement with the rocker. Whenever the "tappet" is in contact with the rocker, the tappet is firmly clamped against any possible movement. The "creeping" problem thus never arises.

Cunningham's complete mechanism is shown on page 741 of the record. The float that is raised by the flue gas appears in the center of Fig. 1, and is designated by the numeral 38. Cunningham uses a series of interconnecting parts to position the recording pen 62 in Fig. 2 in accordance with the height of this float 38, shown in Fig. 1. The parts which appellee has isolated as an alleged anticipation of appellant's tuner are a portion of this series, and they may be seen in Fig. 1 above the float. Independent views of these parts are shown on page 742.

The wheel 55 with the pegs 56 on page 742 is what appellee's expert Mackeown identifies as the tappet, and the member 57 is the rocker. Dr. Mackeown denominates this wheel as the tappet in the following excerpt from his testimony [R. 450-451]:

"The hammer, 43, is rigidly connected to the wheel 55, and which has the two pins, marked in Figure 5, so that the position of this wheel *or tappet* is positioned by the position of the hammer 43." (Emphasis supplied.)

If Cunningham's "tappet" 55 is never adjusted in accordance with the position of the rocker, then Cunningham never encounters the problem that arises in an automatic tuner when the loosened tappet is brought into engagement with the rocket for adjustment purposes.

Appellee's expert Mackeown had to agree that Cunningham never sets his wheel 55 in accordance with the position of the rocker [R. 469]:

“Q. Cunningham never sets his wheel 55, in accordance with the position of the rocker 57, does he?

The Witness: May I have that question again? (Question read.)

A. Not for the purpose he uses the shaft positioning apparatus described.”

To make it doubly clear that Cunningham's type of mechanism could never encounter a situation in which creeping could occur, let us ascertain from Dr. Mackeown what it is that *sets* or determines the adjusted position of his “tappet” wheel 55:

“Q. Now, in Cunningham the wheel 55, has its angular position determined by the position that the hammer, 43, assumes as shown in Figure 6, is that right? A. That is the way it is described in the patent, yes.” [R. 469.]

So the position of Cunningham's tappet is determined by the position of the hammer 43, and not by the rocker. And it will be noted in Fig. 6 that the hammer 43 determines this by the height of the rod 40 while the round pegs on the “tappet” wheel *are completely disengaged from the rocker*.

Cunningham's device is thus *not* one in which the loosened tappet is brought into engagement with the rocker for adjustment purposes. It is only during such adjustment that “creeping” could occur. The Cunningham device therefore cannot be urged as an earlier device which presented a “creeping” problem that was solved in the way that appellant solved it.

Appellee's idea of urging the Cunningham gas measuring device as an anticipation undoubtedly stems from the fact that the wheel 55 carries pegs 56 that engage the rocker 57 when the wheel is lowered, as shown in Fig. 9 (page 742), and the center of wheel 55 is then in line with the axis of the rocker. In this position, the center of the wheel 55 is not an axis, because the wheel is *not rotatable* in this position. Dr. Mackeown also admitted this [R. 468]:

“Q. And by the time the wheel 55 reaches the coaxial position or before that, the wheel is restrained against all rotation, isn't it? A. That is the method described in measuring flue gas.

Q. And that is what happens with the Cunningham device—what you may term as the equivalent to the tappet is firmly engaged and restrained by the arcuate portion of the lever 51, before it ever gets into contact with the rocker 57, isn't that so? A. That is true provided it is actuated by the push rod 45.”

Cunningham's device is *always* actuated by the push rod 45, and it is *always* used for measuring gas. Consequently the “tappet” wheel 55 is *always* clamped against any possible rotation whenever its pegs are in contact with the rocker. Since this so-called tappet wheel is *never free to turn* when in contact with the rocker, no situation arises in the operation of Cunningham's device that is analogous to the situation in which creeping occurs in an automatic tuner. Cunningham had no problem such as that solved by appellant's structure.

Dr. Mackeown's inferences that Cunningham's device might be operated in some other way than by the push rod 45, and for some other purpose than the measurement of

flue gas, are not based upon any disclosure in Cunningham's patent, but are references to a made-over model of Cunningham's device [Pltf. Ex. 11] which the plaintiff altered so that it could be operated *in a different way than by the push rod 45, and for a different purpose than the measurement of flue gas.* The plaintiff omitted the parts which Cunningham used to operate his mechanism, including the push rod 45; and the plaintiff also omitted all the parts which were necessary for the adjustment of Cunningham's "tappet" wheel in the *raised* position in which it had to be adjusted in order to serve Cunningham's purpose.

These alterations were so great that they were gradually conceived over a period of years by those opposing the patent.

"Q. (By Mr. Flam): Dr. Mackeown, when was that model made, Plaintiff's Exhibit 11? A. Well, it was made excluding the gear mounted on the shaft, corresponding to shaft 58 of the patent, and the tuning unit. *The rest of the metal parts were made prior to the Associated case . . .*" [R. 472, emphasis added.]

The *Associated* case, of course, was tried in 1940.

"Q. When was the condenser and the gear added to that model? A. Oh, *something about a year ago.*" [R. 472, emphasis added.]

"Q. The model, Exhibit 11, has no hammer or anything like that on it. When was that taken off of the model? A. Oh, that was taken off *a few days ago.* It served no purpose in tuning a radio or positioning a tuning condenser of a radio set.

Q. But it was a very important feature of the Cunningham device, was it not, to adjust the wheel in accordance with the float? A. It was used for

the purpose indicated in the Cunningham patent, 1930192, to position the wheel 55.

Q. Wasn't that a very important part of the Cunningham device, to position that wheel? A. If you use it for measuring flue gas I think it would be, as Cunningham did, but not if you adapt this device for tuning a radio condenser." [R. 474.]

A device from another art that has to be altered to simulate a later structure, is not an anticipation.

"It is not sufficient to constitute an anticipation that the device relied upon might, by modification, be made to accomplish the function performed by the patent in question, if it were not designed by its maker, nor adapted, nor actually used, for the performance of such functions." *Topliff v. Topliff*, 145 U. S. 156, 161.

Even with all the changes made by appellee and others, the "tappet" of the revised structure could not be set without employing an involved method which was an entire departure from the one that was essential to Cunningham's gas measuring purposes; and if the hammer 43 had not been removed, the "tappet" would have lost its adjusted position as soon as Dr. Mackeown removed his finger. As Dr. Mackeown himself explained [R. 450-451]: "The hammer, 43, *is rigidly connected to the wheel 55 . . . so that the position of this wheel or tappet is positioned by the position of the hammer 43.*" (Emphasis added.) The hammer does this by falling of its own weight until it rests upon the top of the rod attached to the float. This normal function of the arm 44 and screw 43, which Dr. Mackeown calls a "hammer," is explained by Cunningham at the top of page 745, lines 1 to 7, as follows:

“Downward movement of the lever 51 lowers the loop 59 thus *allowing the contact screw 43, carried by arm 44, to contact by its own weight with and rest upon the tappet 41 [the cap 41 on top of the rod attached to the float], as illustrated in Fig. 6, this movement of the arm rotating the wheel 55 to fix the position of pins 56.*” (Emphasis and parenthetical explanation added.)

If this “hammer” or screw 43 had not been removed on the revised model, its weight would thus have rotated the wheel as soon as Dr. Mackeown took his finger away.

Appellee’s changes in the structure and in the mode of operation of Cunningham’s device, really amounted to a complete departure from the theory of its operation—or from what the Supreme Court has referred to as “the law of the structure.” This reference was made in the case of *Clough v. Barker*, which is very illuminating on this matter of changing the manner of operation of prior art mechanisms to simulate later devices. It is particularly pertinent in the present instance:

“The testimony as to any additional or supplementary supply of gas in the Horace R. Barker burner amounts really to this only,—that if that burner is used *now* in a way in which it was *never designed to be used, and is not shown to have ever been used* before Clough’s invention, it may be made to furnish a supplementary supply of gas. Its structure was such that, *to give full effect to its mode of operation*, the surrounding-tube did not require ever to be raised so high as not to be in contact with the cone. * * * Any further raising of the tube was accidental, and *not a part of the law of the structure.* * * * Any raising of the tube unnecessarily high, so as to admit of a flow of gas through an orifice

between the tube and the cone to the flame, cannot be regarded as amounting to an invention of what Clough invented. *The structure was not designed for the same purpose as Clough's, no person looking at it or using it would understand that it was to be used in the way Clough's is used, and it is not shown to have been really used and operated in that way.*" (Emphasis added.) *Clough v. Barker*, 106 U. S. 166, 175-176.

In the instant case, appellee not only changed *the law of the structure* but found it necessary to make substantial alterations in the mechanism in order to do so. And appellee did all this with a device from a very remote art which no one would ever look at and think that it had any possible pertinence to the problems of automatic tuning.

If it had occurred to anyone seeing Cunningham's mechanism that it might have some pertinence to the problems of automatic tuning, and if such person had been able to make all the changes necessary to adapt it to such use, the original inspiration and the making of these changes would in themselves amount to invention. In *Hobbs v. Beach*, 180 U. S. 383, 392, the Supreme Court said:

"It appears from the testimony that several of these addressing machines, of which that of Dennis and York is a type, and which are claimed now to have inspired the Beach patent, had been upon the market for many years, *and yet it never seems to have occurred to any one engaged in the manufacture of paper boxes that they could be made available for the purpose of attaching strips to the corners of such boxes. This very fact is evidence that the man who*

discovered the possibility of their adaptation to this new use was gifted with the prescience of an inventor.” (Emphasis added.)

In its decision in the *Six Wheels* case, *supra*, in which the railroad, or “bogie” art was held to be non-analogous to the automobile truck art, this Honorable Court cited the case of *Cincinnati Rubber Mfg. Co. v. Stowe-Woodward, Inc.*, 111 F. 2d 239 at page 241, where the pertinent reference is as follows:

“To support its contention that the claims are anticipated, appellant cites patents for clothes wringers, fruit presses, and for reducing wood to pulp. These patents are in a remote, non-analogous art and do not anticipate. *National Hollow B. B. Co. v. Interchangeable B. B. Co.*, 8 Cir., 106 F. 693, 702.”

Certainly the present plaintiff is even further afield in citing a flue gas measuring device and then altering it to make it appear pertinent.

The Cunningham mechanism is not an anticipation.

- C. The Lower Court's Holding That Appellant's Use of a Coaxial Relationship Is “Nothing More Than a New Use Per Se” Runs Counter to the Well Known Doctrine That “Invention Cannot Be Defeated Merely by Showing That, in One Form or Another, Each Element Was Known or Used Before.”

Finding 16 reads as follows [R. 54]:

“Were Leishman the first to advantageously employ the mechanical principle of coaxiality in the function of radio tuning devices such employment would be nothing more than a new use *per se*.”

This finding is based upon the last complete paragraph of the opinion appearing on page 48 of the record, which reads as follows:

“Even if we were to assume, which we cannot under the record before us, that Leishman was the first to advantageously employ the mechanical principle of coaxiality in the functioning of radio tuning devices, we could not for that reason under settled standards of patent law validate the patent in suit. Such accomplishment would, we think, be nothing more than a new use, which is not *per se* patentable. *Cuno Corp. v. Automatic Devices Corp.*, 314 U. S. 84. See, also, *Old Town Ribbon & Carbon Co., Inc. v. Columbia Ribbon & Carbon Mfg. Co., Inc.*, 159 F. 2d 379, (C. C. A. 2, 1947).”

The court is of course mistaken in its apparent assumption that Leishman was not the first to employ *the coaxial relationship* to prevent the unwanted rotation of the tappet and rocker that takes place during the setting operation. Certainly neither Marschalk nor Schaefer used it. But the court said that if Leishman was the first, it would be only a new use *per se*, and would not be patentable.

The *Cuno Engineering* decision and the *Old Town Ribbon* decision, which the lower court cites in support of this portion of its opinion, are not at all applicable.

The *Cuno Engineering* decision contains the following paragraph:

“* * * A new application of an old device may not be patented if ‘the result claimed as new is *the same in character as the original result*’ (*Blake v. San Francisco*, 113 U. S. 679, 683, 5 S. Ct. 692, 694, 28 L. Ed. 1070) even though the new result had not before been contemplated. *Pennsylvania R. R.*

Co. v. Locomotive Engine Safety Truck Co., 110 U. S. 490, 494, 4 S. Ct. 220, 222, 28 L. Ed. 222, and cases cited. *Certainly the use of a thermostat to break a circuit in a 'wireless' cigar lighter is analogous to or the same in character as the use of such a device in electric heaters, toasters, or irons, whatever may be the difference in detail of design.*" (Emphasis added.) *Cuno Engineering Corporation v. Automatic Devices Corporation*, 314 U. S. 84, 91, 62 S. Ct. 37. 41.

Applied to the instant case, the doctrine of the *Cuno Engineering* decision is merely to the effect that if a coaxial relationship had been used in the past for a purpose that is "analogous to or the same in character" as appellant's use—that is, for preventing unwanted rotation of two engaging members—there would be nothing patentable about appellant's use of the coaxial relationship for that purpose in an automatic tuner. But a coaxial relationship has never been used for a purpose that is "analogous to or the same in character" as this in any art. The usual purpose for which a coaxial relationship is used, is exactly opposite to that for which it is used in Leishman's combination. A coaxial relationship is usually used to *facilitate* rotation, *not to prevent it*. As Judge Harrison said in the *Associated* case, 36 Fed. Supp. 804, 808:

"* * * The importance of the mechanical relationship is well known in the art and a feature that must be considered in all machine designing *when you desire parts to move together harmoniously and free from friction*. The same principle is used in the crank shaft of any automobile. *It is a mechanical principle that is hundreds of years old*. Both the experts of the plaintiff and the defendant agree in this respect." (Emphasis added.)

But the use of a coaxial relationship for the *opposite* purpose of *preventing* rotation was totally unprecedented in any art. Appellee's expert Schwarz testified as follows on this point [R. 429-430]:

"Q. (By Mr. Flam): Will you answer whether you have ever made parts coaxial in order to prevent movement of one of the parts? A. *I cannot think at this moment of an instance.*

Q. Can you think of any example of one in which movement of both parts is prevented after they have become coaxial?

* * * * *

The Witness: May I hear the question again?

(The question referred to was read by the reporter as follows: 'Can you think of any example of one in which movement of both parts is prevented after they have become coaxial?')

The Court: Movement of both parts?

Mr. Flam: Yes.

A. *I am sorry, I can't at this moment.*

Q. (By Mr. Flam): Then, so far as you know, this arrangement shown in the Leishman patent and as exemplified in these exhibits is unique, you haven't been able to find anything prior to 1937 like it, is that right? A. I haven't testified to the fact that I have seen this device presented to me as coaxiality. I don't believe that I could say that as of 1937 or 1938 or 1939 was the beginning of seeing this device as a unique one.

Q. Prior to 1937 you saw no device, then, in which the principle or relationship of the parts utilized coaxiality to prevent any movement of one or both of the parts that become coaxial? A. *I cannot think of an instance at this moment.*" (Emphasis added.)

With admissions like these from the opposing expert it should be clear that there has been no anticipation in *any* art of the appellant's use of coaxial relationship for preventing movement under circumstances even similar to those which arise in an automatic tuner.

The validity of this patent had been under litigation for eight years preceding the trial of this case. In the *Associated* case tried eight years before the present case, the firm of Lyon & Lyon also represented the company opposing the patent. Counsel was thus well aware that if appellant's patent was to be anticipated, it would be necessary to find some analogous use of a coaxial relationship. Schwarz' testimony after this eight year period is clear evidence that no such use has been found.

The *Old Town Ribbon* decision, which the lower court's opinion also quoted, is likewise not applicable. This was a Second Circuit case in which the court actually took care to make it clear that the Supreme Court doctrine there applied could not be extended to situations in which *even slight* physical changes must be made in order to use an old device for a new purpose.

On page 382, the following caution appears in the *Old Town Ribbon* decision:

“* * * This is the doctrine that a ‘new use’ can never be patentable. In this circuit we have many times applied it, and it has been recognized elsewhere. *As we have said in earlier cases, this does not mean that very slight physical changes in a ‘machine’, a ‘manufacture’ for a ‘composition of matter’ may not be enough to sustain a patent; the act of selection out of which the new structure arises, is the determinant, and small departures may signify and embody revolutionary changes in discovery. . . .*” (Emphasis added.)

The only prior art device in which appellee claimed to find a coaxial relationship was the Cunningham mechanism. (While the lower court erroneously held that this relationship was present in the Schaefer structure, neither of the appellee's experts made any such claim, and previous portions of this brief have shown that Schaefer's axes were widely separated.) In the alleged model of Cunningham's mechanism, as Dr. Mackeown admitted, *many* changes were made in an attempt to make it resemble defendant's device in structure and operation. The foregoing excerpt from the *Old Town Ribbon* decision clearly states that when "very slight changes" have to be made to adapt an old device to a new use, such changes may be enough to sustain a patent. In the instant case, the required changes were many; in fact, the whole theory of operation of Cunningham's gas measuring device had to be changed in order to simulate appellant's mechanism.

It should be clear from the foregoing discussions of the *Cuno Corporation* and *Old Town Ribbon* decisions that neither of them supports the lower court's view that a former use of a coaxial relationship for some other purpose would defeat the patentability of appellant's combination. The law that is applicable here is the one applied by this Honorable Court in *Pointer v. Six Wheel Corp.*, 177 F. 2d 153, where the court said at page 160:

"* * * invention cannot be defeated merely by showing that, in one form or another, each element was known or used before. (Citing many decisions.)

"The question is: Did anyone before think of combining them in this manner in order to achieve the particular unitary result,—a new function? *If not, there is invention.*" (The court's own emphasis.)

The mere fact that coaxiality has been used before for some other purpose, does not in any way affect the patentability of appellant's combination. Finding 16 is thus irrelevant.

D. The Conclusion of the Court of Appeals for the Tenth Circuit That Leishman's Combination Involved Only Mechanical Skill, Is Contrary to the Proven Facts; and Leading Scientific Authorities Say the Said Court's Alleged Analysis of the Reason for "Creeping" Is Fallacious and Its Figures Valueless.

It has been shown that the Marschalk, Schaefer and Cunningham devices relied upon by the district court are not anticipations at all. These were the only things in the present record that the opinion even mentioned. It is clear that the court below was influenced primarily by the decision of the Court of Appeals for the Tenth Circuit; in fact, the opinion herein, speaking of the said Tenth Circuit decision, stated: "we should and do consider such decision as highly persuasive and as weakening any presumption of validity to the claims in suit that would otherwise attach to the Leishman reissue patent by reason of its issuance. This, we think, is manifestly the correct position for us to take in the light of the unanimous confirmatory position of the Tenth Circuit Court of Appeals on rehearing. . . ."

Inasmuch as the present record proved conclusively that appellant's combination involved invention, it should be entirely immaterial what the Court of Appeals for the Tenth Circuit said about it.

Its conclusion that the defendant's solution would have been obvious to a mechanic skilled in the art, is entirely contrary to the practical fact that such solution was not apparent to such mechanics nor to the skilled engineers of large corporations who were confronted with the problem. Speculation is futile, and in this case totally unjustified, in the face of concrete evidence as to the facts.

As mentioned in the introduction to the Statement of the Case, the Court of Appeals for the Tenth Circuit in the case of *Leishman v. The Richards & Conover Co., supra*, rendered two different opinions. In the first of these opinions the said appellate court held against Leishman on the ground that there is no invention in his use of a coaxial relationship for *preventing* movement because, "The principle of coaxial relationship and its importance, where it is desired that two parts of a machine *cooperate together harmoniously*, has been within the knowledge, for many years, of ordinary mechanics skilled in the art." (Emphasis added.) Leishman asked for a rehearing, pointing out to the court that inasmuch as the object of the invention was to *prevent* the two parts from moving at all, the old use of coaxiality for the *opposite* purpose of *facilitating* rotation had no possible significance unless it might be for the purpose of showing that defendant's use of this relationship was unorthodox and a departure from the previous well-known uses.

When it was shown to the Court of Appeals for the Tenth Circuit that the purpose of the Leishman invention was to *prevent* absolutely all rotation during the setting process and that the old uses of coaxiality to *facilitate* rotation were therefore irrelevant, the court, upon rehearing, did an about-face and made a supposed mathematical

analysis of creeping which purported to show why Leishman's method of *preventing* movement would be obvious to a mechanic skilled in the art. The appellate court's analysis had no basis whatever in the record. No such analysis was made by any witness on either side, and nothing of the sort was presented or argued before either the district court or the appellate court. The grounds upon which the claims were held invalid were raised for the very first time by the appellate court itself in its final opinion after rehearing. Leishman thus lost the case upon grounds upon which he had never been heard.

Inasmuch as the present case had already been tried when the Court of Appeals for the Tenth Circuit rendered its decision, Leishman had no opportunity to introduce expert testimony in the present case to show that the Tenth Circuit analysis of creeping was in error. It was consequently most unjust for the lower court to set up the Tenth Circuit decision as a criterion to be followed here. The Court of Appeals for the Seventh Circuit says that a decision rendered under such circumstances "is entitled to but little weight."

In *Hazeltine Research Inc. v. General Electric Co.*, 86 U. S. P. Q. 233, F. 2d, the Court of Appeals for the Seventh Circuit explained that the court below had granted a summary judgment against the patent because it had previously been held invalid by the Court of Appeals for the Sixth Circuit. But the grounds upon which Hazeltine had lost in the Sixth Circuit had not been raised in the lower court in that case, nor had they been briefed or argued by either party. In rendering its decision on June 28, 1950, the Court of Appeals for the Seventh Circuit therefore said (86 U. S. P. Q. 235):

“As to *Hazeltine v. General Motors*, 170 F. 2d 6, it should be observed that the defense of ‘statutory bar’ was not interposed in the District Court. It was not briefed or argued by either party and not even considered in the lower court. *Consequently that decision is entitled to but little weight in the present proceedings.*” (Emphasis added.)

The judgment was accordingly reversed and the cause remanded to the District Court for a trial on the merits.

In order to rectify matters in the instant case, Leishman moved for a new trial so that expert testimony regarding the Tenth Circuit errors could be introduced in court. Defendant supported this motion by affidavits from leading scientific authorities to the effect that the purported analysis of creeping by the Court of Appeals for the Tenth Circuit was pseudo-scientific and based upon the inaccuracy of its own drawings and a misunderstanding of fundamental laws of mechanics.

Inasmuch as the matter discussed in the Tenth Circuit opinion is of a scientific nature, it would seem that the highest authorities available in Southern California to point out the serious errors in the said opinion would be those who are in charge of the branches of engineering to which the patent relates in the three leading universities in and near Los Angeles. These universities are, of course, California Institute of Technology, University of Southern California, and University of California at Los Angeles. If a single affidavit from such an authority had been presented the court might have had reason to suspect that possibly defendant had found only a single professor who could support his view. The defendant felt that if *three* affidavits were presented, each from a

leading authority in a different one of these universities, there should be no room left for any doubt whatever.

Defendant accordingly presented the analysis of creeping made by the Court of Appeals for the Tenth Circuit to the top men in their respective fields at these three universities. At California Institute of Technology and University of Southern California the defendant did not go to a professor of chemical engineering or electrical engineering, nor to an associate professor of mechanical engineering, but to the head of the Mechanical Engineering Departments in each case—that is, the Professor of Mechanical Engineering. At the University of California at Los Angeles there is no specific department of Mechanical Engineering, but there is a division which is even more highly specialized for the present purpose. This division of the Department of Engineering specializes in Engineering Research, and the defendant went to the engineer in charge of this branch of the department. Each of these three men is an outstanding authority, not only by virtue of his present position, but also because of other high qualifications set forth in the first part of each of the respective affidavits. These affidavits appear in Volume I of the present record, pages 71 to 83.

In order to show that the purported analysis of creeping made by the Court of Appeals for the Tenth Circuit is contrary even to the most *elementary* scientific and mechanical principles, defendant also obtained affidavits from an instructor in physics [R. 93] and an instructor in mechanical drawings [R. 83] at the Los Angeles Polytechnic High School.

All of the aforementioned authorities are in unanimous agreement that the said Appellate Court's analysis has no scientific basis whatever, and that Figs. 1 and 2, upon

which the said court based its analysis, are entirely worthless for any analytical purpose.

The Tenth Circuit's opinion based its analysis upon two figures which it drew, purporting to show the forces acting upon the Marschalk tuner. These figures appear on page 90 of the present record. The court referred to the dotted lines on the triangle J as levers. Additional levers were hypothecated between points B and D and between points D and C; and the court undertook to explain how the forces acting at the ends of these levers would act.

Professor Robert L. Daugherty, head of the Department of Mechanical Engineering at California Institute of Technology, says that the court's figures "would mislead anyone attempting to base calculations upon them" [R. 73, top of page]. He says, moreover, that the author of the analysis had "an entirely erroneous conception of levers or lever arms" [R. 73, bottom of page]. Mr. Daugherty gives the correct engineering conception of levers and forces on page 74 of the record, and he contrasts this with the erroneous conception revealed in the Tenth Circuit's opinion. He says, also [R. 74], "Beginners in the study of mechanics must frequently be cautioned against" the type of error made in this decision.

Mr. Hazen, in charge of Engineering Research at the University of California, says "both the figures and the discussion disclose a confused and inaccurate understanding of the principles of the science of Mechanics. Dimensions which are of no consequence in the action of the device are alluded to as lever arms for forces that are not described and which, in the actual device pictured, would not act at the points nor in the manner ascribed in the discussion" [R. 77].

Mr. Sydney F. Duncan, Professor of Mechanical Engineering at the University of Southern California, says that the errors in the drawings are "apparent to the naked eye" [R. 80], and attributes the court's analysis and conclusion to an "imperfect understanding of the laws of mechanics as taught in all schools and colleges of Engineering" [R. 79, last line, *et seq.*]. At the bottom of page 80 Professor Duncan says "The Court's analysis of the lever system purported to be shown by Figs. 1 and 2 of the decision is the result of first, an imperfect understanding of the basic laws governing levers and second, the singular shapes accidentally or intentionally chosen by the draughtsman who drew the figures."

The affidavits of Mr. Sorber [R. 83] and Mr. Madsen [R. 93] are also very illuminating with respect to the improper analysis made by the Court of Appeals for the Tenth Circuit.

It is believed that this Honorable Appellate Court will want to decide the issue of validity according to the formulas of the Supreme Court and those set forth by the present court in its *Six Wheel* decision, *supra*, which are hereinafter applied to the facts of the present case; and it is not believed that this Honorable Court will be impressed by a pseudo-scientific analysis which arrives at a conclusion exactly opposite from the demonstrated facts. The court is respectfully referred to the affidavits from which excerpts have here been quoted, and it is submitted that these authorities show that no weight whatever can properly be attached to what the Court of Appeals for the Tenth Circuit has to say regarding the method of analysis that a skilled mechanic would apply to the problem of "creeping." This Honorable Court has evidence before it as to what skilled engineers

actually did, and their acts speak far more loudly than speculation as to what some mechanic *might* have done.

A great deal more could be said about the gross errors in the opinion of the Court of Appeals for the Tenth Circuit, but it is believed that sufficient has been said already. However, should the present court desire to pursue this matter further, a more complete discussion of the Tenth Circuit analysis of creeping has been incorporated in the appendix hereto.

Even if the Court of Appeals for the Tenth Circuit had been able in retrospect to make a correct analysis of the causes of creeping, such belated analysis would not prove that Leishman's solution of the problem, made at a time when all others had failed, did not amount to invention.

In *Expanded Metal Co. v. Bradford*, 214 U. S. 366, at 381, the Supreme Court said:

"The fact that the invention seems simple after it is made does not determine the question; if this were the rule many of the most beneficial patents would be stricken down. It may be safely said that if those skilled in the mechanical arts are working in a given field and have failed after repeated efforts to discover a certain new and useful improvement, that he who first makes the discovery has done more than make the obvious improvement which would suggest itself to a mechanic skilled in the art, and is entitled to protection as an inventor." (Emphasis added.)

The Supreme Court adhered to that same doctrine in the recent case of *The Goodyear Tire and Rubber Company, Inc. et al. v. Ray-O-Vac Company*, 321 U. S. 275, where the court said at page 279:

"Viewed after the event, the means Anthony adopted seems simple and such as should have been

obvious to those who worked in the field, *but this is not enough to negative invention* (citing cases in a footnote). During a period of half a century, in which the use of flash light batteries increased enormously, and the manufacturers of flash light cells were conscious of the defects in them, *no one devised a method of curing such defects.*" (Emphasis added.)

This Honorable Court reiterated this same doctrine in its *Six Wheel* decision, *supra*, as follows (pp. 160-161):

"At times, the result is accomplished by means which seem simple afterwards. But, although the improvement be slight, there is invention, unless the means were plainly indicated by the prior art. (Citing authorities.)" (Emphasis added.)

In the instant case, the prior art had no simple solution to the problem solved by appellant's coaxial rocker and tappet construction. As this Honorable Court said of Knox in the *Six Wheel* case, appellant "deviated from the entire prior art. *He was an innovator, not a follower.*" (P. 161, the court's own emphasis.)

E. The Tests Prescribed by This Honorable Court in Its Six Wheel Decision Verify That Appellant's Solution of the Creeping Problem Involved Invention.

One of this Honorable Court's tests was set forth in the *Six Wheel* decision, *supra*, where the court, quoting Judge Learned Hand, said (p. 162):

"* * * so far as it is available, they [the courts] had best appraise the originality involved by the circumstances which preceded, attended and succeeded the appearance of the invention. Among these will figure . . ."

Four things were then enumerated. These were: (1) “ ‘the length of time the art, though needing the invention, went without it:’ ” (2) “ ‘the number of those who sought to meet the need, and the period over which their efforts were spread:’ ” (3) “ ‘how many, if any, came upon it at about the same time, whether before or after:’ ” (4) “ ‘and—perhaps most important of all—the extent to which it superseded what had gone before.’ ”

Let us consider these in order.

“* * * THE LENGTH OF TIME THE ART, THOUGH
NEEDING THE INVENTION, WENT WITHOUT IT * * *”

It has already been shown in the Statement of the Case (page 3 hereof) that the search for a satisfactory automatic tuner went back at least as far as 1924, and that various radio and electrical interests, including Zenith, Philco, Western Electric, Westinghouse Electric and Manufacturing Company, and John Hays Hammond, Jr. fought long patent office interferences over the first crude attempts to produce such a tuner. Appellant's simple device, now widely adopted, was not generally known until the patent issued in 1938. The art, though needing the invention, thus went without it for fourteen years.

“* * * THE NUMBER OF THOSE WHO SOUGHT TO
MEET THE NEED, AND THE PERIOD OVER WHICH
THEIR EFFORTS WERE SPREAD * * *”

In the *Pointer v. Six Wheel* case, this Honorable Court attached significance to the fact that “Neither

Stebbins nor Van Leuven succeeded in solving the problem.” (177 F. 2d 153, at 161.) Earlier in the opinion it was disclosed that their activities began in January, 1925, and reference was later made to the fact that “The Knox application was filed January 3, 1927.” (P. 155.) Two people thus sought to meet the need before Knox in the *Pointer* case, and the efforts of the three were spread over a period of two years. In the instant case, numerous people sought to meet the need before Leishman, and their efforts were spread over a period of fourteen years. Even on the specific problem of trying to meet the need by means of a device using adjustable tappets, the efforts were spread over a period of ten years. Schaefer’s patent was filed in 1928 [R. 789], and experimenters unaware of Leishman’s solution continued to work on the problem right up to the time of the issuance of Leishman’s patent. His original patent No. 2,108,538, of which the patent in suit is a reissue, was granted Feb. 15, 1938, but as late as January, 1938, there was still activity along this line, Soffietti’s patent having originally been filed in Luxembourg on January 25, 1938 [R. 840]. General Motors Corporation was also working on the problem at that time, as shown by Schwarz’s testimony previously quoted. The record does not show how many worked on tappet tuners at Zenith Corporation, but we know there was at least Schaefer. Then there were the individual inventors Marschalk, Soffietti, Lane and Mackey. And at General Motors, as shown on pages 28 and 29 hereof, there were Funk, Stelzl, DeRoo, Shuttle-

worth and Schwarz. The number of those who sought to meet the need in the instant case is thus formidable.⁵

“ * * * HOW MANY, IF ANY, CAME UPON IT AT ABOUT THE SAME TIME, WHETHER BEFORE OR AFTER * * * ”

There is no evidence that anyone else came upon appellant's solution at about the same time, either before or after. Aside from appellant, there is no evidence that anyone, anywhere, ever built a coaxial rocker and tappet tuner until his teachings became publicly available some years later.

“ * * * THE EXTENT TO WHICH IT SUPERSEDED WHAT HAD GONE BEFORE. ”

After appellant's coaxial rocker and tappet construction became known, the type of tuners that preceded it soon disappeared from the market almost completely. A few

⁵Others who sought to produce a satisfactory automatic tuner by other means before appellant's patent issued include Bast [R. 1143], Faas [R. 1145], Peck [R. 1149], Vasselli [R. 1156], Bird [R. 1164], Morin [R. 1172], Fitz Gerald [R. 1036], Enderwood [R. 1041], Teaf [702], Philips' Glowlamp Factory, Holland [R. 829], Marvin [R. 369, Patent No. 3 in the Book of Patents], Heath [R. 800], and Jacke [R. 809]. The Book of Patents filed with Defendant's Motion for Summary Judgment as Defendant's Physical Exhibit A contains the following additional automatic tuner patents that were applied for before the original of the patent in suit was granted: Flocco, No. 1,591,417; Hirsch, No. 1,942,599; Lefebvre, No. 1,932,668; Nelson, No. 2,072,956; Carlson, No. 1,964,449; Heeren, No. 2,004,324; Bertschinger, No. 2,021,476; Flaherty, No. 1,948,373; Will *et al.*, Germany, No. 2,111,413; Schwarzhaupt, No. 2,069,627; Kellogg, assigned to Crosley Corporation, No. 2,253,433; Clements, No. 2,205,844; and Schnell, No. 2,138,328. Aside from the patents of Leishman, the record in the *Associated* case contained copies of only the Marschalk, Schaefer and Flaherty patents. Judge Harrison accordingly said (36 Fed. Supp. 804, at 807): "The record discloses a dearth of inventions in this field." Actually, there was merely a paucity of evidence. Had that record been as complete as this, it could have been said that there had been a flood of inventions.

other types were tried for awhile, such as appellee's rack tuner [Pltf. Ex. 3], but in the mechanical tuner field the coaxial rocker and tappet construction has largely displaced all others. The abandonment of other types by Zenith and General Motors is characteristic of what has happened in the industry, and the inability of engineers to produce anything better after ten years is strong evidence of the importance of appellant's contribution.

A full account of the automatic tuners that preceded Leishman's construction upon the market, was given by him at the trial. It was undisputed. The most pertinent parts of this testimony have been reproduced in the appendix hereto, pages 19 to 23 of the appendix. Briefly summarized, the situation was as follows:

The Zenith Corporation, owner of the Heath patent that was applied for in 1924, was probably the first to place an automatic tuner upon the market. This was the Zenith-Schaefer tuner [Deft. Ex. H], which used ten movable parts between the adjustable tappet and the rotatable shaft, these parts being supported by eight guides. This tuner was on the market for about two years—between 1927 and 1929 (Appendix, pp. 19-20).

At about that same time a motor driven tuner appeared. In tuners of that type, the operator pressed a button corresponding to the desired station, and an electric motor did the actual work of rotating the tuning shaft to the required angular position. These tuners were also upon the market only about two years (Appendix, p. 19).

In 1936, the so-called telephone dial tuners came into commercial use (Appendix, p. 20). These were not sufficiently accurate by themselves, but were rendered usable because of the development of an electric circuit that

compensated electrically for their mechanical inaccuracies (Appendix, p. 21). This circuit was known as automatic frequency control (Appendix, p. 21). This circuit was quite complicated, and a special book was written to acquaint service men with its operations (Appendix, pp. 23-24).

With the development of the automatic frequency control circuit, motor-driven tuners again appeared on the market (Appendix, pp. 20-21).

Tuners using coaxial rockers and tappets became commercially available early in 1938. The first of these was manufactured by the Crosley Corporation [R. 218]. Other tuners of this type were also placed on the market in 1938 [R. 221-230].

The demise of the motor driven and telephone dial tuners may be briefly told in Leishman's own words [R. 256-257]:

“Q. (By Mr. Flam): * * * Did the development of the automatic frequency control circuits make it feasible to use your devices, including a coaxial rocker and tappet arrangement that you have testified about? A. No. * * * It wasn't required. Insofar as I know it has never been used with any radio set using a coaxial rocker and tappet tuner.

Q. You mentioned yesterday that motor-driven tuners had been used, I think you said, in the years 1936 and 1937. Were they in common use after the type of tuner exemplified by the Crosley device⁶ then on the market? * * *

* * * * *

A. No. Those that were already in the hands of the public probably continued to be used. But as far

⁶The Crosley tuner [Deft. Ex. BB.] embodied the coaxial tappet and rocker construction.

as I know, no manufacturer manufactured a motor-driven tuner after that time. If they did, they were a rarity and they were an unusual thing in the lines of radio manufacturers. I don't know of any.

Q. What about the telephone dial type of tuner, did they continue in popularity after February or the latter part of the year 1938? A. * * * Some manufacturers may have continued to make some models that were already in production, but no new models were introduced using telephone dial type tuners."

After February, 1938, one manufacturer after another adopted coaxial tappet-and-rocker tuners, and the telephone dial type went into the discard. A list of some of the manufacturers that adopted appellant's combination appears on page 40 hereof.

The Zenith Corporation, which owned the Heath patent applied for in 1924, and which manufactured and sold the Schaefer tuner for two years, was among the early users of appellant's combination. It purchased tuners licensed under the patent here at issue from Crowe Name Plate and Manufacturing Company, Leishman's licensee [R. 225-226], and after experimenting with still other types it recently began making its own coaxial rocker and tappet tuners [Deft. Ex. GGG] because "This system is so simple and fool proof." [R. 1140.]

Like Zenith, General Motors also experimented with other types of tuners. These included the rack tuner [Pltf. Ex. 3]; the advancing nut type described by Mr. Schwarz in the portion of his testimony extending from the middle of page 368 to page 371; and another type referred to in the answer to Defendant's Interrogatory 35 [R. 36]. Only 10,000 of the latter kind were used [R.

36]; the advancing nut type was discontinued a year before the trial [R. 369]; and the rack tuner was abandoned in 1940 [R. 336].

As to the coaxial rocker and tappet tuners, however, Mr. Schwarz testified as follows [R. 414-415]:

“A. . . . They were used in the Buick, Pontiac and the Chevrolet—the Buick beginning late *in 1941* and Chevrolet *in 1941* and the Pontiac, I believe *in 1941*, and *they were continued up to the present time and they are being continued during the 1948 model year*. I would place the quantity in those three-car divisions of this tuner, whether we bought it or made it, whether condenser tuned or iron core tuned at, I would say the figure might be about *one million tuners*.” (Emphasis added.)

But in this recapitulation, Mr. Schwarz forgot all about Oldsmobile and Cadillac. Regarding them, he had earlier given this testimony:

“Q. Is General Motors at the present time equipping its current models with tuners like those shown by these last mentioned exhibits? A. Some of the current models have this particular type of tuner.

Q. Can you tell us what one? A. The Chevrolet and the Oldsmobile and the Cadillac.

Q. You recognize this tuner as of the type which has been referred to here as having an adjustable tappet and a rocker? A. Yes, I do.

Q. Will you state whether or not in tuners of that type as you have designed them and General Motors has produced them, the centers of those tappets are arranged so that they are symmetrical or concentric or identical with the centers of the rocker. A. Yes, I believe they are concentric.

Q. You understand that that has been referred to here as coaxiality where those two centers register?

A. Yes." [R. 340.]

That completes the entire line of General Motors cars.

Leishman's tuners are also used in Chrysler, Plymouth, Dodge, DeSoto, Hudson, Ford, Mercury and Lincoln cars. (See pp. 41 and 42 hereof.)

In both household and automobile sets, appellant's tuner has thus been an outstanding success.

In the fourth test of invention—"the extent to which it has superseded what had gone before"—it again ranks very high.

The success of defendant's combination was not only immediate, but it has been continuous through a decade. It has stood the test of time as no other tuner has done. The best mechanical engineers in the radio industry failed in their experiments to hit upon appellant's construction, and in the ten years since it appeared they have been unable to think of anything any better.

F. Appellee Infringes Appellant's Patent by Appropriating Appellant's Structure, as Defined in the Claims at Issue.

1. Appellee Admits That Its Tuners Contain Coaxial Tappets and Rockers.

In case there is any doubt whatever as to appellee's use of a tappet and rocker that are coaxial in the fully engaged position, appellee's use of this structure may easily be verified without even looking at the accused devices. Appellee's expert Schwarz readily admitted that General Motors had appropriated this structure. In the portion of

this testimony appearing on pages 339 and 340 of the record, he admitted that this structure was present in Defendant's Exhibit JJ, which was Exhibit 2 of the complaint; and on pages 347 to 348, he made the same admission with regard to Defendant's Exhibit NN, which was Exhibit 1 to the complaint. For the convenience of the court, these portions of Mr. Schwarz' testimony have been reprinted in the appendix hereof on pages 17 to 19.

The question of infringement should thus merely be one of determining whether appellee's structure falls within the wording of the claims at issue. That such is the case has never been denied by appellee at any time. As to infringement under such circumstances, the Supreme Court on May 29, 1950, in the case of *Graver Tank & Mfg. Co., Inc., et al. v. Linde Air Products Co.*, 70 S. Ct. 854, said (p. 855):

"In determining whether an accused device or composition infringes a valid patent, resort must be had in the first instance to the words of the claim. If accused matter falls clearly within the claim, infringement is made out and that is the end of it."

In the present case, however, appellant is confronted by the decision of non-infringement which this Honorable Appellate Court rendered in the case of *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722. In that case, however, the court did not then have the benefit of most of the pertinent evidence now before it. In its *Associated* decision, this Honorable Court examined the original patent and stated (p. 727):

"If they [the reissue claims in suit] do not include levers, the claims are not for the same invention as the original patent and hence are invalid. If they

do include levers, the claims are not infringed, for the accused device contains no lever.”

This Honorable Court then additionally held that the plungers which moved the tappet in the accused device are not the equivalents of the levers in Leishman’s structure.

In the case of *Leishman v. Radio Condenser et al.*, 167 F. 2d 890, this court affirmed its *Associated* decision. The *Radio Condenser* case was decided *on a motion for summary judgment* that there was no infringement, and Leishman consequently had no opportunity to introduce evidence as to how his contribution must be interpreted in the light of the prior art—an aspect of the subject of *invention* which this Honorable Court has subsequently recognized to be important in determining the issue of *infringement*.

2. When the Present Invention Is Considered in the Setting of the Prior Art, It Becomes Clear That It Is Immaterial Whether the Patented Combination Is Operated by a Plunger or a Lever.

In this Honorable Court’s recent decision in the *Six Wheel* case, *supra*, the court quoted with approval the following words of Mr. Chief Justice Taft in *Eibel Process Company v. Minnesota and Ontario Paper Co.* (1926), 261 U. S. 45, 63:

“In administering the patent law the court first looks into the art to find what the real merit of the alleged discovery or invention is and whether it has advanced the art substantially. If it has done so, then the court is liberal in its construction of the patent to secure to the inventor the reward he deserves.”

Although these words were written in 1926, this Honorable Court in the *Six Wheel* decision has recognized that

the same rule is to be followed today. That such is the case is now doubly certain, for the Supreme Court on May 29, 1950, in its *Grauer* decision, *supra*, has referred approvingly to the decision of Judge Learned Hand in *Royal Typewriter Co. v. Remington Rand*, 168 F. 2d 691, 692—a decision in which Judge Hand recommended substantially the same procedure, as follows:

“Coming then to the question of infringement, we are first to interpret the claims in the light of disclosure; and *both the claims and the disclosure in the setting of the prior art.*”

If this Honorable Court were now, in the light of the present record, to interpret “both the claims and the disclosure in the setting of the prior art,” it would find that the means by which the tappet is moved into engagement with the rocker is entirely immaterial. This was not apparent to this Honorable Court in either the Associated or Radio Condenser cases, because in neither of these cases did this court consider the issue of invention. Yet in the *Eibel* case, which this Honorable Court has quoted approvingly, it was only because the Supreme Court had looked “into the art to find what the real merit of the alleged discovery or invention is” that it was able to determine whether the invention had been appropriated. At page 69 of its *Eibel* decision, the Supreme Court said:

“We come finally to the question of infringement. If the *Eibel* patent is to be construed as we have construed it, there can be no doubt that the defendant uses the *Eibel* invention.”

It was by a consideration of the issue of invention that the Supreme Court was able to learn how to construe *Eibel*’s patent. A consideration of the issue of invention

in the present case, shows that appellant's contribution resides in the coaxial rocker and tappet arrangement that eliminated creeping in a simple and effective manner, and that the novelty of this contribution is not in any way tied in with the use of a lever.⁷ Infringement is thus not to be determined by the presence or absence of a lever, but rather by the presence or absence of a rocker and tappet whose axes are coaxial in the completely engaged position. Appellee admits that this structure is present in both of its accused tuners. If this Honorable Court is to follow the Eibel method of determining infringement which this court has approved in its *Six Wheel* decision, infringement is thus already made out.

3. **The Last Decision of the Supreme Court Dealing With the Doctrine of Equivalents, Rendered May 29, 1950, Requires This Honorable Court to Hold That Infringement Cannot Be Avoided by Using a Plunger for Moving the Tappet.**

In its new decision in the *Graver* case, *supra*, the Supreme Court has redefined equivalents in terms that can leave no room for any difference of opinion as to the equivalence of plungers for levers in appellant's patented combination. The Supreme Court said (pp. 856-857):

"What constitutes equivalency must be determined against the context of the patent, the prior art, and the particular circumstances of the case. Equivalence, in the patent law, is not the prisoner of a formula

⁷Judge Harrison in the *Associated* case, 36 Fed. Supp. 804, recognized that a lever is not essential to appellant's combination. He said (p. 806):

" . . . it cannot be seriously denied that the accused device uses a rotatable rocker, adjustable tappet and when brought to rest the two parts are coaxial—the essential elements contained in the plaintiff's structure." (Emphasis added.)

The plaintiff in the *Associated* case was, of course, Leishman.

and is not an absolute to be considered in a vacuum. It does not require complete identity for every purpose and in every respect. In determining equivalents, things equal to the same thing may not be equal to each other and, by the same token, things for most purposes different may sometimes be equivalents. *Consideration must be given to the purpose for which an ingredient is used in a patent, the qualities it has when combined with the other ingredients, and the function which it is intended to perform. An important factor is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was.*

“A finding of equivalence is a determination of fact. Proof can be made in any form: through testimony of experts or others versed in the technology; by documents, including texts and treatises; and, of course, by the disclosures of the prior art.” (Emphasis added.)

Let us consider these things in the order in which the Supreme Court sets them forth.

- (a) WHEN CONSIDERATION IS GIVEN, AS THE SUPREME COURT REQUIRES, “TO THE PURPOSE FOR WHICH AN INGREDIENT IS USED IN A PATENT, THE QUALITIES IT HAS WHEN COMBINED WITH THE OTHER INGREDIENTS, AND THE FUNCTION WHICH IT IS INTENDED TO PERFORM,” APPELLEE’S PLUNGER IS SEEN TO BE THE EQUIVALENT OF THE LEVER SHOWN IN THE PATENT.

In the tests recommended by the Supreme Court in its *Graver* decision, the court first says (p. 857): “Consideration must be given to the purpose for which an ingredient is used in a patent.” The purpose of the lever shown

in the patent is to move the tappet; the purpose of appellee's plunger is likewise to move the tappet.

The next thing mentioned by the Supreme Court is "the qualities it has when combined with the other ingredients." When combined with the tappet, the lever has the quality of moving it into engagement with the rocker. When combined with the tappet, appellee's plunger also has the quality of moving the tappet into engagement with the rocker.

The third thing to which the Supreme Court says consideration should be given, is "the function which it is intended to perform." In its decision in the *Associated* case, this Honorable Court said (137 F. 2d 722, 727): "The plungers perform a part, and only a part, of the function performed by appellant's levers F. and 66." Reference was then made to footnote 17 which reads: "Appellant's levers have a double function—that of operating the tappet 61 and that of operating the tappet 62. The latter function is not performed at all in the accused device." This court did not say that it attached any significance to the fact that the latter function was not performed in the accused device, and it could not properly have done so, because the second tappet (62) was not an element in any of the claims at issue. Both the original and reissue patents [R. 771 and 777, column 1, lines 28 to 30] state that one of the objects of the invention is "to make it possible for a single manual operation to tune *either* a radio set or a television set, or both." The claims at issue in the *Associated* case as well as here are directed to a tuner for a radio set only, and *not* both. The second tappet is required only in tuners that are to perform the double tuning operation, and the second tappet is

therefore not an element in any of the claims that are drawn to a radio tuner.⁸ *In a radio tuner, appellant's levers thus have a single function*—that of operating the tappet 61. This function is performed by appellee's plunger.

(b) THE SUPREME COURT SAYS WHEN PERSONS REASONABLY SKILLED IN AN ART KNOW OF THE INTERCHANGEABILITY OF ONE THING FOR ANOTHER, THEY ARE MECHANICAL EQUIVALENTS. PLUNGERS AND LEVERS ALSO RESPOND TO THIS TEST.

The Supreme Court further says (p. 857): "An important factor is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was." Persons reasonably skilled in any art would encounter in any store or lunch counter cash registers operated interchangeably by *levers or plungers*. They would have daily contact with desk telephones that are switched out of circuit by placing the hand-set on the *plunger* in the cradle, and with pay telephones that are switched out of circuit when the receiver is hung on a *lever*. In their own homes they

⁸In Plaintiff's "Memorandum Opposing Defendant's Motion for Summary Judgment" [R. 24] Mr. Leonard S. Lyon and Mr. Leonard S. Lyon, Jr., first explain the operation of the parts in the patent that are used for a radio tuner, and then say [R. 25]:

"In the drawing there appears a second cam or tappet 62 which is mounted upon the lever F and is shaped to contact another rocker 54 mounted upon a shaft distinct from the shaft of the rocker 48, which second shaft is intended to be the tuning shaft of a television receiving apparatus and which is not present in plaintiff's accused tuners.

The device of the patent in suit, therefore, consists essentially of *three elements*: a *lever* adjustably mounting a *tappet* which is movable by the lever into contact with a *rocker* attached to the shaft to be positioned by a movement of the lever." (Emphasis added.)

would turn lights on or off by pushing buttons (plungers) or by flipping little *levers*. The controls of their automobiles would be operated interchangeably by *levers* or *plungers*; in fact, they would encounter these common equivalents in the controls of nearly all devices. In addition, persons reasonably skilled in the art would be familiar with the prior art, which teaches the interchangeability of plungers and levers for operating automatic tuners. Such patents will be discussed later in connection with what the Supreme Court says regarding the use of *the prior art* for determining infringement.

(c) THE NEW EVIDENCE IS OF A TYPE APPROVED BY THE SUPREME COURT FOR DETERMINING INFRINGEMENT, AND IT VERIFIES THAT THE ORIGINAL AND REISSUE PATENTS ACTUALLY DISCLOSED A PLUNGER FOR MOVING THE TAPPET.

The Supreme Court says that proof of equivalence (p. 857) "can be made in any form: through the testimony of experts or others versed in the technology; by documents, including texts and treatises . . ." Let us consider "the texts and treatises" before discussing "the testimony of experts and others versed in the technology"—because that is the order in which defendant introduced the new evidence that was not before this Honorable Court in the *Associated* and *Radio Condenser* cases. Texts and treatises were offered to verify that the original and reissue patents both actually disclosed the use of a plunger for moving the tappet in appellant's combination. The part 57, Fig. 2, on which the tappet 61 is mounted in the original and reissue patents, is as much a plunger as those

on which the tappets are mounted in the General Motors and Crosley tuners.⁹

Webster's New International Dictionary defines the term *plunger* as follows:

"b *Mach.* (1) A sliding *reciprocating piece* driven by or against fluid pressure; a piston; esp., a long valveless piston, used as a forcer in a force pump (which see), as a ram in a hydraulic press, or the like. (2) *A piece with a motion more or less like that of the foregoing*, as a device for firing the charge in a cartridge or a contact mine, *the dasher of a churn, the iron core of an electric sucking coil.*" (Emphasis supplied.)

The coaxial relationship introduced by defendant makes it absolutely necessary to use a plunger both in Plaintiff's Exhibit JJ tuner and in the illustrative embodiment shown in defendant's patent. When the recess is in the rocker, as in these embodiments, the tappet must be moved so that its axis extends within the space between the rocker arms in order that the axis of the tappet and the axis of the rocker may be brought into line. This requires that the tappet be mounted upon something that can move in and out of this space with a reciprocating motion like "the dasher of a churn" or "the iron core of an electric sucking coil," which Webster says are plungers. The device of the patent provides a plunger 57 for this purpose, and it moves down inside the rocker and moves out again with a reciprocating motion like the dasher of a churn or the iron core of an electric sucking coil.

At the trial, Mr. Leishman gave the following *undisputed* testimony on this point [R. 262]:

⁹The tuners involved in the *Associated* case, *supra*, were made by the Crosley Radio Corporation, which assumed the defense.

“Q. By Mr. Flam: Can you state in your own words what is meant by a plunger, without referring to a dictionary? A. A plunger is any device that moves in and out of something else with a reciprocating motion, as does the little cores that move in and out of the coils in the permeability tuners that we have discussed here, or the iron cores in sucking coils or solenoids.

Q. Do plungers have to move in a straight line? A. No. So long as they have a reciprocating motion and move into something they are still plungers.”

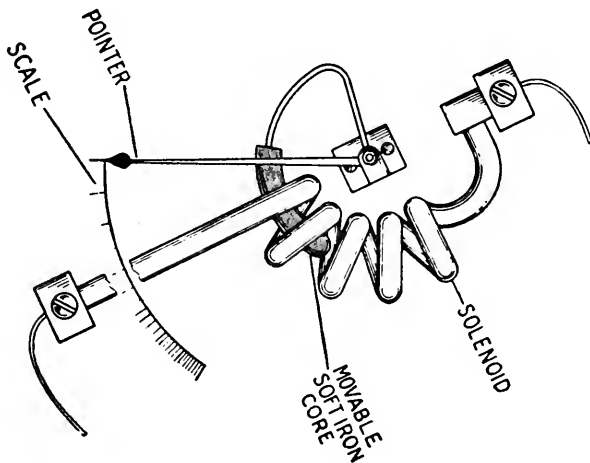
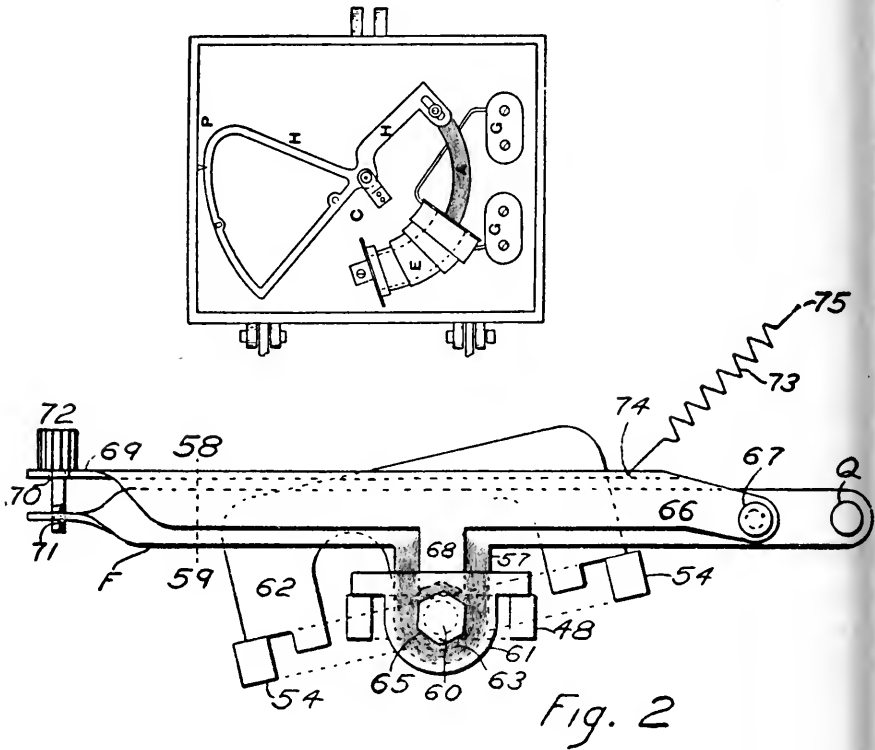
No attempt was made to refute this testimony by either of plaintiff's witnesses nor in the cross-examination of Mr. Leishman.

In *Elements of Alternating Currents* [Deft. Ex. PP, R. 1072], a text published in 1901 by the Macmillan Company of New York and London, the following pertinent explanation appears on page 41 [R. 1072], regarding the soft iron plungers in plunger type ammeters and voltmeters:

“36. Plunger type ammeters and voltmeters.—In instruments of this type the current to be measured passes through a coil of wire which magnetizes and attracts a movable piece of soft iron to which the pointer is fixed.”

In order that the court may readily compare such plungers with the plunger 57 in Fig. 2 of appellant's patent, two different illustrations of such meter devices with their iron core plungers (colored blue) are arranged on page 98 hereof, one above and the other below a reproduction of defendant's Fig. 2. The illustrations of the electric devices have been oriented so that the various parts are in substantially the same relative positions in all three figures. The upper figure is Fig. 44 from page 1019 of

"A Dictionary of Applied Physics" [Def. Ex. QQ, R. 1074], which was published in 1922, also by Macmillan



and Co., Limited, London. The iron core plunger A moves into the sucking coil E in the same manner that defendant's plunger 57 moves into the rocker, as shown in the central figure. Regarding this device, page 1018 of Defendant's Exhibit QQ [R. 1073] says:

"This instrument uses the essential principle of a moving iron ammeter in which *a soft iron core is drawn into a solenoid*, the motion being controlled by gravity. * * * The principle of the instrument is shown in Fig. 44, in which E is the *solenoid*, A the *iron core* which is pivoted at C₁ and carries an iron frame H, to which the glass tube D is attached. As the tube is tilted by the action of the solenoid the balls run from the curved portion of the tube into the lower limb, and the number which have fallen over indicate the maximum intensity of the current." (Emphasis added.)

The figure below Fig. 2 from the patent, is an illustration from *Electrical Measurements* [Deft. Ex. RR, p. 1076 of the present Record], a text of the Vocational Education Program for National Defense. This illustration is Fig. 30 from the said text, and the caption under the figure in the text reads:

"Early Magnetic Vane Mechanism of the Solenoid Type Courtesy of Weston Electrical Instrument Corp."

The description of this figure in the text is as follows:

"Fig. 30 illustrates one model of a former solenoid meter. The solenoid was stationary and fastened to the instrument base. The moving element consisted of a soft iron core and a pointer. The moving element

was so balanced on its pivot that *the soft iron core extended slightly into the solenoid*, and the pointer was inclined at an angle to allow for a circumferential travel over a graduated scale corresponding to the distance *the core was pulled into the solenoid.*" (Emphasis added.)

In the figure just described, it will be noticed in the reproduction on page 98 hereof that the movable soft iron core plunger moves into the solenoid or sucking coil just as the plunger 57 moves into the rocker in Fig. 2 from appellant's patent.

The part 57 that moves appellant's tappet thus fully responds to Webster's definition of a plunger. Leishman's testimony that part 57 is a plunger was unchallenged.

Plaintiff's tuners thus cannot be distinguished from appellant's illustrative embodiment on the ground that plaintiff's tappet is moved by a plunger, for appellant's tappet is also moved by a plunger. None of the evidence demonstrating this fact was in the record of the *Associated* case or the more recent case of *Radio Condenser Co., et al. v. Leishman, supra*.

The only possible distinction that remains is that plaintiff's plunger moves in a straight line while the plunger shown in defendant's illustrative embodiment moves in an arc.

Appellee knows that the issue of infringement ultimately gets down to this immaterial distinction. No litigant could possibly introduce any evidence or testimony that would give this distinction any significance. Rather than attempt to belabor such a point, those attacking the patent in *The Richards and Conover* case admitted that it made no difference whether the tappet was moved by a

lever or a plunger.¹⁰ In the instant case, neither of appellee's witnesses gave any testimony whatever on this matter; in fact, appellee was unable to introduce any evidence of any kind in support of its contention that infringement has been avoided by moving the tappet by means of a plunger instead of a lever. Appellee's counsel hoped to prevail by preventing appellant from introducing any evidence that would run counter to this Honorable Court's opinions in the *Associated* and *Radio Condenser* cases, in which there was no testimony on this point. As soon as an attempt was made to introduce testimony that would require a revision of this Honorable Court's previous opinions, appellee's counsel tried to make it appear that such testimony was entirely out of order. Objection was made to the very first question, as shown on page 164 of the record where the following appears:

"Q. (By Mr. Flam): Now, in connection with that model, Mr. Leishman, does it make any differ-

¹⁰The expert for The Richards and Conover Company was Dr. Spotts, Associate Professor of Machine Design at Northwestern University and a consulting engineer for Galvin Manufacturing Company, manufacturers of the radio receivers containing the tuners that were there accused. A copy of the printed record in that case was filed with Plaintiff's Supplemental Reply Brief, and it has been made a part of the record on appeal. On page 182 of that record, the following testimony of Dr. Spotts appears:

"A. If one wished to use a plunger that would give straight line motion as support for the tappet rather than the pivoted lever which gives motion in the arc of a circle of a rather large radius, draftsmen would have no compunctions about substituting a plunger giving a straight line for the lever, giving an arc of a circle, since the motion is rather small while the tappet is being brought into contact with the rocker. A draftsman would make that substitution in the usual line of his work.

"Q. (By the Court): Easy to do. A. Oh, yes.

"Q. It would impose no serious problem where a lever is used and you decided you wanted to use a plunger, to change the design to make it work with a plunger? A. A draftsman does those things every day in the week in his usual line of work."

ence in your device whether the tappet is moved in an arc to contact the rocker or whether it is moved in a straight line to contact the rocker?

Mr. Lyon: I object to that, your Honor. The witness is asked if it makes any difference in his device. We have a decision here, two decisions of the Circuit Court of Appeals on the point and it is asking him for a conclusion without the facts being stated on which the conclusion is to be based and I think it is a conclusion of law when he asks him if it makes any difference in his device. I don't know exactly. It is not a very illuminating question, but if it is intended to be a statement derogatory of the court of appeal's decisions, why, I object to it as out of order.

Mr. Flam: I am not offering it in derogation of any opinion. I am trying to show here that there are other factors not considered by the Circuit Court of Appeals which make it necessary for them to revise that opinion.

The Court: Objection overruled."

Mr. Lyon, of course, recognized that the question *was* very illuminating. He recognized at once that it referred to the only possible distinction between moving the tappet by means of a rectilinearly movable plunger or moving the tappet by means of a lever; in fact, as soon as the question was asked he specifically stated that we have "two decisions of the Circuit Court of Appeals on the point"—decisions which, however, had been arrived at without the court's having the benefit of expert testimony as to the equivalence of moving the tappet in a straight path by means of a plunger or in a curved path by means of a lever. Counsel knew that if appellee is to prevail upon the issue of infringement it must rely solely upon these previous decisions.

After the court overruled Mr. Lyon's objection, the testimony continued [R. 165]:

"Q. (By Mr. Flam): Will you answer the question? A. No, it makes no difference at all by what route or course the tappet comes into engagement with the rocker. I think that the models in the L series containing the rocker L-1 and the tappet L-2 demonstrate that you can bring it down in an arc or you can bring it down straight or you can bring it down from the other side and it is all the same story. It doesn't make any difference. It doesn't make a bit of difference to my device in the operation of the device, what path the tappet takes to and from that coaxial position. The point is, you have got to have it there when the adjustment is made, and then you have got to move it out of the way so that the rocker can turn, and when the device is to be tuned again the rocker [obviously this should read *the tappet*] has to be pushed down into engagement, and the route, I think is immaterial. We have a chart here which further illustrates that point."

Appellant then demonstrated that it makes no difference whatever by what route the tappet is brought into engagement with the rocker. This was done by means of Defendant's Exhibit N, which was explained in the testimony extending from page 165 to page 169 of the record. For the convenience of the court this testimony has been introduced on pages 24 to 29 of the appendix hereto. This exhibit clearly shows that it makes no difference whatever whether the tappet is brought into engagement with rocker along a curvilinear path or a rectilinear path, or whether it moves in a path which curves to the right or to the left, or straight up and down. Appellee's counsel objected to the introduction of Exhibit N for the same reason that he

objected to defendant's testimony [R. 166 and 169], this objection being that it was out of order [R. 164] because it conflicted with this Honorable Court's previous decisions.

This Honorable Court may further demonstrate the immateriality of the path of the tappet by placing the rocker L-1 upon the base L and then moving the *coaxial* L-3 tappet to and from the rocker in a variety of paths, curved or straight. So long as the tappet reaches its ultimate coaxial position with the rocker, the path is seen to be utterly immaterial.

There was no such chart as Defendant's Exhibit N in the *Associated* case nor in the summary judgment proceeding in *Radio Condenser et al. v. Leishman*.

There was no such demonstrating material as the parts L, L-1 and L-3 in the record of either of these previous cases.

In defendant's physical Exhibit N, plungers were printed on flaps that folded over enlargements of the patent drawings, demonstrating that the action is the same regardless of whether the path of the tappet is arcuate or straight. This exhibit also shows that a straight path is merely a mean path between the two opposite arcuate paths that are formed if the tuner is facing to the right or to the left. *Nothing like this was in the record of either of the previous Ninth Circuit cases.*

In order to have an abundance of evidence on this point, Mr. Flam handed Mr. Leishman a chart [R. 270], later marked Defendant's Exhibit SS, on which two figures were drawn, each showing a tappet in coaxial engagement with a rocker. The witness added a lever to one of the figures, showing the tappet mounted upon a lever. Mr.

Flam's next question and the witness' answer were as follows:

"Q. Now will you show what a draftsman would need to do to mount the tappet upon a plunger in connection with the lower part of this chart? A. All you need to do is extend the plunger portion and provide guides for the plunger." [R. 270-271.]

No chart similar to chart SS was present in the *Associated* case, and no such demonstration was given; and in the more recent *Radio Condenser* case there was, of course, no trial.

The immateriality of the nature of the operating means, and the equivalency of levers and plungers for moving the tappet, were thus established independently by four different items of *new* evidence. First, by the demonstration that the projection 57 is as much a plunger as plaintiff's operating means; second, by the L series models; third, by defendant's chart N; and fourth, by Defendant's Exhibit SS, on which the substitution of a plunger for a lever was demonstrated to the Court. *This was all new evidence. None of it has ever been seen by this Honorable Court of Appeals.* Any one of these four items of evidence is alone sufficient to show that infringement of the claims here at issue cannot be avoided by the substitution of a plunger for a lever, and that these elements are full equivalents for moving the tappet.

Plaintiff offered no evidence whatever to support its contention that levers and plungers are not equivalents for operating defendant's combination. It produced no exhibits relevant to this contention. Neither of its expert witnesses discussed any of appellant's exhibits that were presented to show that the nature of the operating means

was immaterial to the invention or its operation. Neither witness was questioned in any way regarding Defendant's Exhibits N, or SS, or the exhibits in the L series. Neither of them was questioned in any effort to refute defendant's testimony that the projection 57 shown in the reissue patent is actually a plunger, nor did either of them refer in any way to Appellant's Exhibits PP, QQ, or RR, which establish this fact. Moreover, Leishman was not even cross-examined regarding his testimony that the nature of the operating means is immaterial and that either levers or plungers may be used to move the tappet. The evidence introduced by appellant is *the only evidence in the record on this issue, and it was not disputed.*

Regarding the determination of equivalence by means of texts and testimony, the *Graver* decision (p. 857) said:

“* * * Like any other issue of fact, final determination requires a balancing of credibility, persuasiveness and weight of evidence.”

The evidence presented by appellee must be accepted as credible, because it was not disputed and no opposing evidence of any kind was presented. All the weight was thus on one side and there was none whatever on the other.

(d) THE SUPREME COURT SAYS THAT EQUIVALENCE MAY BE DETERMINED “OF COURSE, BY THE DISCLOSURES OF THE PRIOR ART”; AND IN THIS CASE, THESE DISCLOSURES ALONE ARE DETERMINATIVE.

When no prior art is available, the courts must determine whether one thing is the equivalent of another by ascertaining whether they perform the same function *in the same or substantially the same way*. The real meaning of this frequently used phrase is lucidly explained in

Section 468 of *Walker on Patents*, Deller's Edition, Vol. 3, pages 1706 and 1707:

"In a purely scientific sense, a screw always performs its function in a substantially different way from a lever, and in substantially the same way as a wedge. Screws and wedges are equally inclined planes, while a lever is an entirely different elementary power. But screws and levers can practically be substituted for each other in a larger number of machines than screws and wedges can be similarly substituted. When a lever and a screw can be interchanged and still perform the same function with a result that is beneficially the same, they are said to perform the same function in substantially the same way."

Although "a screw always performs its function in a substantially different way from a lever," screws and levers are nevertheless "*said* to perform the same function in substantially the same way" when they "can be interchanged and still perform the same function *with a result that is beneficially the same.*" (Emphasis added.)

In the absence of any prior art, a court considering the equivalence of *plungers* and levers, rather than *screws* and levers, in appellant's combination would thus be required to ascertain if a plunger can be interchanged for the lever "and still perform the same function with a result that is *beneficially the same*"; and if the answer is in the affirmative, the plungers and levers would be "said to perform the same function in substantially the same way." Plaintiff's plungers and the levers in the patent both perform *identically* the same function of moving the tappet, and with a result that is *beneficially the same*. It should thus be obvious that a court applying this test

would be called upon to say that plaintiff's plungers and the levers of the patent "perform the same function in substantially the same way" and are mechanical equivalents.¹¹

¹¹The paragraph from Walker on Patents that is here applied to the determination of whether appellee's plungers are equivalents of the levers shown in the patent, was cited in the decision of the Court of Appeals for the Tenth Circuit in its first opinion in *The Richards and Conover* case, *supra*, in its reference to the decision of this Honorable Court in the *Associated* case, which the Court of Appeals for the Tenth Circuit discussed as follows (172 F. 2d 365, 368, 369):

"There, as here, the alleged infringing device employs only one rocker and one set of corresponding tappets, and the tappets are mounted on and moved by plungers, not levers.

"However, claims 7 to 11, inclusive, embrace a single rocker and corresponding adjustable tappets mounted on pivots, means for moving each tappet so one of its sides engages one arm of the rocker and rotates the rocker until the other side of the tappet engages the other arm of the rocker, and *they do not specifically embrace a lever means for carrying and moving the tappets; and we are unwilling to rest our decision on the narrow ground that the lever in the device of the patent in suit and the plunger in the accused device are not mechanical equivalents.*" (Emphasis added.)

Footnote No. 3 of the Tenth Circuit decision then referred to the previous Tenth Circuit decision in *Steiner Sales Co. v. Schwartz Sales Co.*, 98 F. 2d 999, at page 1012, and to Section 468 in Walker on Patents which has just been discussed.

Page 1012 of its *Steiner* decision to which the Court of Appeals for the Tenth Circuit referred in its footnote 3, contains the following:

"We are of the opinion that a device having ribs which project from the base of the inner section, extend along the sides thereof and travel in *grooves or channels* in the side walls of the outer section, and *by means of which the inner section may be moved back and forth horizontally*, responds to the claims in suit equally with one where the inner section may be tipped back and forth *on a hinged joint.*" (Emphasis added.)

In the present case, a plunger that travels in grooves or channels, and by means of which the tappet *may be moved back and forth horizontally*, responds to the claims in suit equally with one where the operating member is a lever that moves on a *hinged joint*.

The lower court in *The Richards and Conover* case held the claims here at issue were clearly valid and clearly infringed.

But if there is prior art available, the court does not have to bother with all this. There is then a simpler formula. The *Graver* decision at page 856 cites two old Supreme Court opinions that deal with the significance of the prior art in this respect. One of these was *Imhaeuser v. Buerk*, 101 U. S. 647, 25 L. Ed. 945, where the court said (p. 656):

“Patentees of an invention consisting merely of a combination of old ingredients are entitled to equivalents, by which is meant that *the patent in respect to each of the respective ingredients comprising the invention covers every other ingredient which, in the same arrangement of the parts, will perform the same function, if it was well known as a proper substitute for the one described in the specification at the date of the patent.* Hence it follows that a party who merely substitutes another old ingredient for one of the ingredients of the patented combination is an infringer if the substitute performs the same function as the ingredient for which it is so substituted, and it appears that it was well known at the date of the patent that it was adaptable to that use.” (Emphasis added.)

Another old Supreme Court case cited with approval in the *Graver* decision is *Seymour v. Osborne*, 11 Wall. (78 U. S.) 516, at 556, 20 L. Ed. 33 at 42. This case, like the instant one, dealt with a *reissue* patent.¹² The Supreme Court, in citing *Seymour v. Osborne*, shows that the application of the doctrine of equivalents is the same with respect to a *reissue* patent as it is with respect to an

¹²In *John Kitchen, Jr. Co. v. Levison*, 188 F. R. 658, 661, this Honorable Court of Appeals for the Ninth Circuit quoted this *Seymour v. Osborne* case as authority for the finality of the decision of the Commissioner of Patents as to the propriety of the *reissue*.

original patent, for the page cited in the *Graver* decision sets forth precisely the same doctrine expressed in *Imhaeuser v. Buerk*, *supra*. The *Seymour v. Osborne* explanation is as follows:

“* * * Mere formal alterations in a combination in letters patent, however, are no defence to the charge of infringement, and the withdrawal of one ingredient from the same and the substitution of an other which was well known at the date of the patent as a proper substitute for the one withdrawn, is a mere formal alteration of the combination if the ingredient substituted performs substantially the same function as the one withdrawn.” (Emphasis supplied.)

In the instant case, the function of the lever and the function of the plunger are not merely *substantially* the same; they are *identical*. The function in both cases is to move the tappet. The question then becomes, does the prior art show that a plunger was “well known at the date of the patent as a proper substitute” for a lever.

Now that the Supreme Court has stated anew that equivalence may be determined “of course, by the prior art” and has cited these two old cases which deal with this subject, the doctrine which they expound is affirmed as the law of the land. And since one of these newly approved cases deals with a reissue, it is clear that the terms of reissue claims are not to be restricted to what was shown in the original, but are to receive the benefit of the doctrine of equivalents the same as any other patent. If the prior art shows that plungers and levers have both been used for operating automatic tuners, or for moving tappets, this Honorable Court has no alternative consistent with these newly affirmed decisions but to hold that plain-

tiff cannot avoid infringement by withdrawing the lever and substituting a plunger.

Let us first look at some of the patents which appellee itself urged as pertinent prior art in the complaint. The first one on appellee's list [R. 7] is the Kettell patent [R. 817] issued in 1883. Figure 2 and a portion of Fig. 1 from this patent are reproduced on the folding insert at the back of the appendix hereof. In view of the discussion of this patent on pages 14 and 15 of this memorandum, no further explanation of Kettell's clock-setting mechanism will here be necessary. Suffice it to say that Kettell shows a *lever* E (colored blue) for moving the attached tappets (colored red) in Fig. 1, and he shows a *plunger* a (colored blue) for moving the attached tappets (colored red) in Fig. 2. Kettell explains that the *plunger* and *lever* serve the same purpose. He says [R. 820, lines 81 to 83]:

“a represents a slide [plunger] working in ways b, and having lateral arms [tappets] similar to lever F, Fig. 1 [obviously this should be the lever E, because F is the cam], *it serving the same purpose.*” (Emphasis added.)

Levers and plungers were thus known as equivalents for moving tappets as far back as 1883, and the patent even says they serve the same purpose.

Appellee also urged in the complaint [R. 7] that the Woodbridge patent [R. 713] is pertinent prior art, and Judge Harrison agreed as to its pertinence, as shown on page 17 hereof. Figures 1 and 10 of this patent have been reproduced for the convenience of the court on the folding insert at the back of the appendix to this brief. Fig. 1 shows a lever C¹ for moving the tappet (colored red)

in Fig. 1; and in Fig. 10 Woodbridge shows a plunger C⁴ for moving the tappet C³.

Plungers and levers were thus shown as equivalents for moving tappets in the Woodbridge 1897 patent.

The Danish patent 52.047 [R. 829] even illustrates the use of both levers and plungers for moving the tappets in an automatic tuner, the tappet 3a in Fig. 1 [R. 837] being mounted on the plunger 3, whereas in Fig. 2 the tappet is shown mounted on a projection 14 attached to the lever 4.

The Peck patent [R. 1149] discloses an automatic tuner that is optionally operated by *levers* 50 [R. 1150] or by electrically operated *plungers* 30 [R. 1149]. After illustrating these alternatives, the specification says [R. 1152, lines 69 to 71]: “*Various expedients may be adapted to cause the downward movement of the pivot 20.*” (Emphasis added.)

This pivot is attached to the lever 50 on page 1150 and to the plunger 30 on page 1149.

In view of this disclosure in Peck’s prior art 1932 patent, any court interpreting appellant’s disclosure in the light of the prior art must hold that “various expedients may be adapted to cause the downward movement of the pivot” 60 on which appellant’s tappet is mounted, as shown in Figs. 2 and 3 *of the original and reissue patents here at issue.*

Three of the prior art patents just discussed illustrate and describe the alternative use of plungers and levers for moving tappets, and one of these, the Danish patent, dis-

closes these equivalents for moving tappets in an automatic tuner. The Peck patent [R. 1149] also illustrates and describes an automatic tuner operated interchangeably by levers (Figs. 3 and 5) or by electrically operated plungers 30 (Fig. 3). In addition to these, the Bast patent [R. 1143] and the Faas patent [R. 1145] both show plunger-operated tuners, as does the Marvin patent No. 1,704,754 [No. 3 in the Book of Patents introduced as Deft. Ex. A with Defendant's Motion for Summary Judgment] which was discussed by Schwarz at the trial [R. 369].

It has thus been conclusively shown that plungers were well-known as substitutes for levers in automatic tuners when appellant's patent was granted, and that they had even been used for the specific purpose of moving tappets.

In its *Imhaeuser v. Buerk* decision, *supra*, which the Supreme Court cited with approval in its opinion in the *Graver* case, the court said (p. 656):

“* * * a party who merely substitutes another old ingredient for one of the ingredients of the patented combination is an infringer if the substitute performs the same function as the ingredient for which it is so substituted, and it appears that it was well known at the date of the patent that it was adaptable to that use.”

This Honorable Court thus has no alternative consistent with the Supreme Court's decision in the *Graver* case, excepting to hold that General Motors has infringed the claims here at issue.

4. This Honorable Court Has Previously Recognized That Infringement Cannot Be Avoided by Substituting a Rectilinearly Movable Member for a Pivoted Member That Performs the Same Function.

This Honorable Court in the *Six Wheel* case, *supra*, applied substantially the same rules for determining infringement that the Supreme Court has reaffirmed in the *Graver* case. The *Six Wheel* opinion referred to the same doctrines and even cited some of the same cases, thus (177 F. 2d 153 at 163):

“These elements combine to produce *the same results*,—flexibility, equal distribution of the load, avoidance of excessive wear,—which the patent in suit first taught the art. Whether, as the court found, both *were known as proper substitutes for the mentioned elements*,—*Gould v. Rees*, 1872, 15 Wall. 187, 193 [cited in the *Graver* case],—or not, the court found correctly identity of structure *on the ground of equivalency* [citing cases, including *Imhaeuser v. Buerk*].

“It also found correctly identity of function. *Sanitary Refrigerator Co. v. Winters* [also cited in the *Graver* case].

“Both spell infringement.” (Emphasis added.)

Proceeding according to these rules, this Honorable Court referred (p. 163) to Pointer’s “coil springs . . . which provide the only spring suspension means for the four wheels from the frame of the vehicle,” and held that “They are the equivalent, structurally and functionally, of the laminated leaf springs in the patent in suit.”

Coil springs, which move in a straight line, and the pivoted laminated leaf springs of the patent there in suit,¹³ differ in precisely the same way as do appellee's plungers and the levers shown in appellant's patent. This is graphically shown on the folding insert following page 138 hereof.

Now that Pointer's rectilinearly movable coil springs have been held to be equivalents of Knox's pivoted leaf springs, there can be no question as to the equivalence of appellee's rectilinearly movable plungers and the pivoted levers shown in the patent here at issue.

5. When the Present Invention Is Considered in the Setting of the Prior Art and in the Light of Pertinent Decisions, It Is Clear That the Reissue Claims Do Not Have to Include Levers in Order to Be for the Same Invention as the Original Patent.

A consideration of the issue of invention and the relationship of appellant's contribution to the art, will clarify another phase of the matters touched upon in this Honorable Court's decision in the *Associated* case. Had the claims here at issue been in the original patent, it does not appear that this Honorable Court would have held that the operating members must be specifically *levers* if the claims were to be infringed. The judicial limitation of appellant's claims to combinations including a lever appears to have been based upon the theory that claims in a reissue patent must be strictly limited to the exact form of structure shown in the original patent. At least, that

¹³The Knox patent in suit in the *Six Wheel* case says (p. 1, lines 64 to 67) :

"The springs 3 are pivotally secured to the frame 1 at one end thereof by any suitable means, such as a spring hanger (not shown) of any suitable or desirable construction."

is the ultimate significance of this Honorable Court's decision in the *Associated* case. Such an interpretation, however, runs counter to the entire theory of reissues, as will hereinafter be shown.

In its decision in the *Graver* case, the Supreme Court quoted with approval from the following paragraph of the decision of Judge Learned Hand in *Royal Typewriter Co. v. Remington Rand, Inc.*, 168 F. 2d 691, 692:

“ . . . a patent is like any other legal instrument; but it is peculiar in this, that after all aids to interpretation have been exhausted, and the scope of the claims has been enlarged as far as the words can be stretched, on proper occasions courts make them cover more than their meaning will bear. If they applied the law with inexorable rigidity, they would never do this, but would remit the patentee to his remedy of re-issue, and that is exactly what they frequently do. Not always, however, for at times they resort to the ‘doctrine of equivalents’ to temper unsparing logic and prevent an infringer from stealing the benefit of the invention.”

This decision says that some courts would not resort to the doctrine of equivalents to expand a claim “but would remit the patentee to his remedy of re-issue.” The clear inference here is that if the Patent Office passed upon the changed scope of the claims as presented in a reissue, such courts would abide by the Patent Office's determination as to what the patentee was entitled to. But Judge Learned Hand indicated that the use of the doctrine of equivalents often makes a reissue unnecessary. In the present case, however, a reissue had already been obtained before suit was brought, and appellant therefore only asks that the claims, *as allowed by the Patent Office, be literally*

interpreted. None of these claims is restricted to a lever—in fact, claims 7 and 8 do not mention any kind of an operating member whatever.

In its *Associated* decision this Honorable Court, instead of accepting the Patent Office's determination that appellant is entitled to such claims, specifically limited and restricted them to the exact structure considered to have been covered in the original. As authority for this procedure, this Honorable Court cited the statement in *U. S. Industrial Chemicals, Inc. v. Carbide and Carbon Chemicals Corp.*, 315 U. S. 668, that "It must appear from the face of the instrument that what is covered by the reissue was intended to have been covered and secured by the original." In making this statement, the Supreme Court certainly did not mean that reissue claims could not be broad enough to cover equivalents of the elements shown in the original. Such claims are proper in all patents, and there is no discrimination against reissues in this respect. The thing the court objected to in the *U. S. Industrial Chemicals* case was not an attempt to cover equivalents, but an attempt to eliminate from a process claim a step that had been stressed as essential in the original patent.

Where the terms in reissue claims have been made broad enough to cover mechanical equivalents of the elements shown in the drawings, an attempt to limit them by interpretation to the precise form shown in the drawings, would run counter to the very theory of reissues. Tersely stated, the situation then illogically would become just this: If the patentee does not obtain a reissue, the court will apply the doctrine of equivalents to give him the protection to which he is entitled; but if he goes to the Patent Office to have his patent reissued with claims that are

broad enough to include the equivalents to which the prior art entitled him, then the court, because it is dealing with a reissue patent, will restrict the terms to the specific structure shown in the original patent.

Reissue claims may be made broad enough to include equivalents excepting where the right to such reissue "is lost by long lapse of time." *Walker on Patents*, Deller's Edition, Vol. II, p. 1361, explains the rule thus:

"§315. Whether a patentee, in effecting a reissue, may describe an equivalent of one of the elements of the originally patented combination, and may claim the combination broadly enough to cover that equivalent, is a question which depends upon the effect, in particular cases, of the application of the rule in *Miller v. Brass Co.* (see §323). Where such a reissue is applied for promptly after the granting the original patent, it may be sustained [*McArthur v. Supply Co.*, 19 Fed. 263, C. C., S. D. N. Y. (1884)]; but the right time to obtain such a reissue, is lost by long lapse of time after the date of the original and before the application for that reissue"

The time limit fixed in *Miller v. Brass* was two years. In the instant case, the application for reissue was filed 3 months and 8 days after the original was granted [top of R. 777]. There was thus no such lapse of time as would deprive Leishman of his right to cover his combination broadly enough to include equivalents of the parts shown.

In examining the disclosure in the setting of the prior art, as recommended in the *Royal Typewriter* decision favorably cited by the Supreme Court, it is clear that the nature of the operating means is entirely immaterial to appellant's invention. From the discussion of the equiva-

lency of plungers and levers in preceding portions of this brief, it is plain that the Patent Office, in allowing claims broad enough to cover both, granted appellant only that to which he was clearly entitled. The Patent Office has thus properly applied the doctrine of equivalents, and "the manual movable operating member" does not have to be a lever in order for the reissue claims to be for the same invention as the original patent.

The decision of the Patent Office as to the propriety of the reissue is of a far more binding nature than the grant of an original patent, for the Supreme Court said in *Seymour v. Osborne*, *supra* (p. 543):

"Where the commissioner accepts a surrender of an original patent and grants a new patent, his decision in the premises, in a suit for infringement, is *final and conclusive*, and is not re-examinable in such a suit in the Circuit Court, unless it is apparent upon the face of the patent that he has exceeded his authority, that there is such a repugnancy between the old and the new patent that it must be held, as a matter of legal construction, that the new patent is not for the same invention as that embraced and secured in the original patent." (Emphasis added.)

There is no such repugnancy in the instant case, for the original and reissue specifications, as well as the drawings, are identical.

After the Patent Office, in granting the reissue, has redetermined the scope of the protection to which the patentee is entitled in the light of his disclosure and the doctrine of equivalents, the new claims *cover the mechanical equivalents of each of the respective elements*, for that is the way the *reissue* claims are construed in the portion of the *Seymour v. Osborne* decision to which the

Supreme Court makes reference in the *Graver* case. The cited portion of the *Seymour v. Osborne* decision dealing with reissues, reads as follows (11 Wall. 516, 556):

“* * * Mere formal alterations in a combination in letters patent, however, *are no defence to the charge of infringement, and the withdrawal of one ingredient from the same and the substitution of another which was well known at the date of the patent as a proper substitute for the one withdrawn, is a mere formal alteration of the combination if the ingredient substituted performs substantially the same function as the one withdrawn.*” (Emphasis added.)

In reissue claims, the terms thus cover the mechanical equivalents of each of the respective elements, and the terms are not to be construed by interpretation to cover only the specific forms shown in the original patent.

None of the claims at issue calls for a lever.

Claims 7 and 8 do not even include the operating means as an element; but in claims 9, 10 and 11 the operating means is described as “a manually movable operating means” or “a manually movable operating member.” Any kind of operating member thus meets the requirements of the claim. This, of course, is as it should be, because appellant’s invention clearly has nothing whatever to do with the operating member. The prior art showed that plungers, levers, pull rods [Morin, R. 1172] and strings [Heath, R. 800] had been used for this purpose. In permitting Leishman to refer to the means that performs the function of moving the tappet as “a manually movable operating member” or “manually movable operating means,” the Patent Office thus permitted the use of terms that would include all the equivalents to which the prior art entitled him. The last expression of the Supreme

Court on the subject of equivalents, shows that the Patent Office acted properly.

But even if all the claims had specifically referred to the operating means as *a lever*, infringement would still be present, for this Honorable Court would then be required to “resort to the ‘doctrine of equivalents’ to temper unsparing logic and prevent an infringer from stealing the benefit of the invention”—to use the words of Judge Learned Hand in the *Royal Typewriter* case, *supra*, which the Supreme Court in its *Graver* decision has quoted with approval.

General Motors admits that it has appropriated the coaxial rocker-and-tappet construction and discarded its own prior developments. It has stolen the benefit of appellant’s invention, and this Honorable Court should so rule.

6. In Unguarded Moments of Candor, Appellee Admits That the Substitution of a Plunger for a Lever Does Not Constitute a Valid Distinction.

That appellee fully realizes it is immaterial to appellant’s patented combination whether the operating member is a lever or plunger, is shown by unguarded statements made by appellee’s expert Schwarz at the trial and by counsel for appellee in some of its briefs before the lower court. These statements reveal that appellee is well aware that there is no valid distinction between a lever and a plunger for operating automatic tuners. In discussing the General Motors rack tuner [Pltf. Ex. 3], Schwarz made the following statement [R. 388]:

“Continuing with this (indicating), we then took the Schaffer tuner, which was available to us on RCA patents, and modified it and made it a recti-

linear push-button type as exemplified by Plaintiff's Exhibit—

Q. 3? A. 3 * * *

Plaintiff's Exhibit 3 rack tuner employed a tappet that was mounted *on a rectilinearly movable plunger*, while the tappet in Schaefer's rack tuner *was moved by a lever*. But General Motors nevertheless says that its plunger-operated rack tuner *was the Schaefer tuner*; and it did not urge that its use of a plunger instead of a lever created a distinction that gave General Motors the right to use the rack construction; it used the rack construction because it "was available to us on RCA patents." General Motors has made no arrangement with Leishman to use the coaxial tappet-and-rocker construction, yet it uses this construction anyway, contending in Leishman's case that the use of a plunger avoids infringement. It apparently makes a great deal of difference whether the patent is controlled by a large corporation that cannot be bamboozled, or by a private citizen that may be imposed upon.

In the Trial Brief on Behalf of Plaintiff [R. 40], counsel for appellee also refers to

" . . . the Zenith tuner which came upon the market and was sold for two years during 1929 and 1930 (dfts. Exs. H and I, R. 313) *which was patented as Schaefer patent No. 1,906,106* (ptfs. Ex. 18, R. 475), and *which later reappeared in the form of a General Motors push button automatic automobile radio tuner* (ptfs. Ex. 3, R. 327), of which approximately five hundred thousand were sold during the years 1939 and 1940 (R. 324)." (Emphasis added.)

Appellee's counsel thus contends that although the General Motors Exhibit 3 tuner is operated *by a plunger in-*

stead of a lever, as shown in the Schaefer patent, the General Motors Exhibit 3 tuner is nevertheless still the Zenith tuner.¹⁴ The same recognition of the immateriality of lever or plunger operation appears later in the same "Trial Brief on Behalf of Plaintiff" where reference is further made to

" . . . the Schaefer tuner, *made over from lever form to plunger form* into the General Motors tuner plaintiff's Exhibit 3 . . ." [R. 40, Emphasis added.]

If the General Motors Exhibit 3 tuner is the Schaefer tuner "made over from lever form to plunger form," as appellee's counsel contends, then the General Motors plunger-operated coaxial rocker-and-tappet tuners are the Leishman tuner *made over from lever form to plunger form*.

These definite admissions as to the equivalency of plungers and levers for operating automatic tuners, must

¹⁴Schaefer refers to his operating levers as *keys* [R. 791, lines 71 to 88.] They are keys that pivot, or turn. The plungers in Plaintiff's Exhibit 3 tuner are *pushing keys*. It was long ago adjudicated that one is the equivalent of the other. In *Bundy Mfg. Co. v. Detroit Time-Register Co.*, 94 Fed. 524, 538 (C. C. A. 6), the court said:

"* * * Whether his key actuated the feeding and printing mechanisms by being *turned* or *pushed* is not of the essence of the invention. *Pushing keys* setting in motion bolts and other mechanisms were old, and but the equivalent of keys which did the same thing by *turning*." (Emphasis added.)

In *New Departure Bell Co. v. Hardware Speciality Co.*, 69 Fed. 152 (C. C. N. J.), the court adjudicated specifically that when a claim calls for a *lever* as the operating element, a *push bar* is the *manifest mechanical equivalent* (p. 156):

"* * * In this patent is to be found all the elements of this Rockwell claim, combined and operating in substantially the same way and for the same purpose, with the single exception that the *operative push bar* of the French patent—of which the *lever of the claim* is the *manifest mechanical equivalent*—has a vertical action instead of a horizontal movement." (Emphasis added.)

be held against appellee. They show that there is no substance whatever to appellee's defense to the charge of infringement.

7. Statements in the Complaint Simplify the Application of the Claims to Appellee's Tuners.

Plaintiff's Exhibit 2 with the complaint was introduced in evidence as Defendant's Exhibit JJ. The issue of infringement with respect to this tuner is somewhat simplified by the averment in the complaint [R. 6] that this tuner is the same, insofar as the subject matter of the claims at issue is concerned, as the tuners shown in its Exhibits 3, 4 and 5, which are drawings attached to the complaint. The tuner shown in the Exhibit 3 drawing is the Crosley tuner that was involved in the Associated case. The Ninth Circuit Court of Appeals in that case found that the rocker and tappet in that tuner were the equivalents respectively of the rocker 48 and the tappet 61 of the reissue patent in suit. At page 727 of its decision, the appellate court said:

“* * * It has a rocker which is the equivalent of appellant's rocker 48 . . . It has tappets each of which is the equivalent of appellant's tappet 61.”

8. The Claims Applied to Plaintiff's Tuners Exemplified by Defendant's Exhibit JJ.

The application of claim 7 to plaintiff's tuner identified as Defendant's Exhibit JJ is as follows:

(a) “In combination with the tuning mechanism of a radio apparatus.” This is the preamble portion of the claim and defines the combination as one related to the operation of a tuning mechanism. Such a mechanism is present in the three rods or cores that

move together as a unit in and out of the tubes in the metal containers at the top of the exhibit.

(b) “of a rotatable rocker mounted upon a shaft operatively connected with said mechanism, said rocker having two arms each extending on a different side of said shaft;” the Circuit Court of Appeals said that the rocker in the accused device in the *Associated Wholesale* case was the equivalent of this rocker, and the plaintiff admits that Defendant’s Exhibit JJ is the same as far as this claim is concerned as the tuner in that case.

(c) “means adjustably movable about a pivot¹⁵ and acting upon bodily movement in one direction to slidably engage either arm of said rocker and push it in one direction to an angular position at which the movement of said rocker is arrested by the collision of said means and the oppositely moving other arm of said rocker;” This is the tappet that engages the rocker in this exhibit, the tappet being “adjustably movable” about its pivot, or center of rotation. The Circuit Court of Appeals said that the tappet in the accused device in the *Associated Wholesale* case was

¹⁵The statement is made in footnote 14 of the *Associated* decision that “neither tappets nor levers are mentioned in these claims. Instead, claims 7 and 8 speak of ‘means adjustably movable about a pivot;’” In this connection it might be pointed out that while the term “tappet” was used a good deal at the trial and in the present memorandum, as well as in the specification of the patent, this term is probably not the best nor the most logical one for the member to which it has been applied. This element is seldom called a tappet in the industry. It is more often called a “cam” or a “striker.” Schaefer called the tappet a “rocker” [R. 793, line 37], while Lane and Mackey used the term “cam member” [Def’t. Ex. K]. Marschalk called it a “plate” [R. 826, col. 1, line 65, *et seq.*] To avoid confusion, the part that we have called a *tappet* has been referred to in the claims in more definite terms which describe its nature or purpose in the combination.

the equivalent of the corresponding tappet shown in the patent, and the plaintiff admits that its entire tuner is the same as the accused tuner in the former case insofar as these claims are concerned.

(d) "and a spring for holding said means in a normally inoperative position;" Such a spring is attached to the bottom of each of the plungers in this exhibit for pulling the plunger back to hold the tappets in a normally inoperative position away from the rocker.

(e) "said rocker constructed so as to admit at least a portion of said means between said arms."

This is a further description of the rocker, already shown to have been found by the Circuit Court of Appeals in the former accused device, of which the plaintiff admits that its tuner is a counterpart.

Claim 8 is similar to claim 7, except in the concluding phrase which specifies "the axis of said means being substantially coaxial with the axis of said rocker when said means is in engagement with both of said arms." This claim has been limited by the disclaimer printed on the back of the patent to restrict the rocker to one that is so constructed that it may act as a common follower for a plurality of such recited movable means. This provides that the rocker be of such form as to accommodate a number of station selecting members, as in all the accused tuners. Since the rocker of the accused tuner in the *Associated Wholesale* case was held to be the equivalent of the rocker shown in the patent, it is needless to go into further detail.

Claim 9 may be read upon the accused structure as follows:

(a) "In a mechanism for angularly positioning a control of a radio device, a combination including:" In plaintiff's tuner under discussion, the rocker must be angularly positioned in order to move the three rods just the right distance inside of the tubes.

(b) "a rotatable rocker comprising two shoulders lying on opposite sides of the axis of said rocker;" The rocker of the accused tuner in the previous case having been held the equivalent of this rocker, and the plaintiff having stated in the complaint that its Exhibit 2 (now Defendant's Exhibit JJ), is patent-wise the same, this element is manifestly present in the plaintiff's tuners.

(c) "and a manually movable operating means comprising an adjustably mounted positioning element adapted upon movement of said means in one direction to engage one shoulder of said rocker and rotate said rocker to a position at which the movement of said element is arrested by the collision of said element and the oppositely moving other shoulder of said rocker"; This latter refers to the tappet member which is manually movable by any suitable means, such as by a lever or a plunger.

(d) "said rocker constructed to permit at least a portion of said means to pass beyond a line connecting the points on said shoulders at which the shoulders are contacted by said means." This again refers to structural details of the rocker, but in view of plaintiff's admissions and the holding of the Circuit Court of Appeals that the rocker of the former accused device is the equivalent of the corresponding rocker of the patent, it is pointless to go into further detail.

Claim 9 has been further limited by the disclaimer on the back of the patent to specify that the adjustment of the positioning element or tappet is such that the positioning element may be fixed and maintained in its position irrespective of repeated operations of said operating means. The structure is of course shown in the patent, and since the tappet of the former accused device was held to be the equivalent of the tappet shown in the patent drawing, the tappet of the present accused tuners is manifestly also the equivalent in view of plaintiff's admissions.

Claim 10 may be applied to the accused structure as follows:

(a) "In a mechanism for angularly positioning a control of a radio device, a combination including:" This is the same as the preamble of claim 9, already discussed.

(b) "a rotatable rocker comprising two shoulders lying on opposite sides of the axis of said rocker;" The Circuit Court of Appeals found this rocker in the previously accused device, and the complaint states that Plaintiff's Exhibit 2 [now Defendant's Exhibit JJ] is the same insofar as these claims are concerned.

(c) "a manually movable operating member;" The plaintiff's plunger is obviously a manually movable operating member.

(d) "and a positioning element adjustably mounted on a pivot carried by said member; said element adapted upon movement of said member in one direction to engage one shoulder of said rocker and rotate said rocker to a position at which the movement of said rocker is arrested by the collision of said element and the oppositely moving other shoulder of said rocker"; This refers to the tappet and its func-

tion. The previous holding of the Circuit Court of Appeals with respect to the tappet is *stare decisis* in the present case, no new evidence being presented to the contrary on this point.

(e) "the axis of said element and the axis of said rocker being substantially coaxial when said element is in engagement with both of said shoulders." Here again the admitted sameness of the present and previous tuners makes the appellate court's holding apply equally to this case regarding the rocker and tappet.

Claim 10 has been limited by disclaimer in the same regard as claim 9.

Claim 11 also clearly reads upon the accused structures as follows:

(a) "In a mechanism for angularly positioning a control or a radio device, a combination including:" This is the same preamble used in claims 9 and 10, and has therefore already been discussed.

(b) "a rotatable rocker comprising two arms lying on opposite sides of the axis of said rocker;" The previous holding is applicable here with respect to the rocker.

(c) "a manually movable operating member;" This is the manually movable plunger and push button.

(d) "a positioning element adjustably mounted on a pivot carried by said member; said element adapted upon movement of said member in one direction to engage one arm of said rocker and rotate said rocker to a position at which the movement of said rocker is arrested by the collision of said element and the oppositely moving other arm of said rocker"; As in claim 10, this refers to the tappet and its function. The

previous holding of the Circuit Court applies with respect to the tappet.

(e) "said rocker having a recess between said arms so that the axis of said element and the axis of said rocker may be substantially coaxial when said element is in engagement with both of said arms"; Inasmuch as this pertains to the tappet and rocker, the previous holding is controlling with respect to its application here, no contrary evidence having been presented.

(f) "and means operable from the external end of said member for holding said element in adjusted position." In the accused structure this means is operable from the external end by pushing or pulling on the button—a variation which the plaintiff admits to be immaterial because the complaint asserts that Exhibit 2 [now Deft. Ex. JJ] is the same as the tuner in the Associated case insofar as the claims here at issue are concerned.

Inasmuch as the admissions of the complaint and the positive proof of the equivalency of plungers and levers make it impossible for the plaintiff to deny that its Exhibit 2 filed with the complaint responds to the requirements of these claims, the tuners exemplified by this exhibit must be held to infringe all the claims at issue—that is, claims 7 to 11, inclusive.

9. The Claims Applied to Plaintiff's Tuners Exemplified by Defendant's Exhibits LL and NN.

Plaintiff's other type of tuner, exemplified by Defendant's Exhibits LL and NN, differs from the General Motors tuner just considered in that the phantom axis is in the tappet rather than in the rocker, and the plunger part is operated by a lever.

Such changes as putting the central recess in the tappet instead of the rocker of course does not avoid infringement. This well-established principle of law is stated as follows in 48 *Corpus Juris* 309, section dd.:

“Where there is no change in function and no substantial change in operation, infringement is not avoided by a mere transposition, rearrangement, or change in location of parts or elements, such as a mere reversal of position or operation.”

Claims 8 and 10 read squarely upon Defendant's Exhibits LL and NN.

The application of claim 8 is as follows:

(a) “The combination with the tuning mechanism of a radio apparatus.” This is the structure at the top of the exhibits containing the tubes and the iron cores that move in and out of the tubes.

(b) “of a rotatable rocker mounted upon a shaft operatively connected with said mechanism,” This is the rocker with the central shaft operatively connected with the tube and core mechanism by means of the side links, the cross bar and the three wires.

(c) “said rocker having two arms each extending on a different side of said shaft:” These arms are the two bars on opposite sides of the central shaft. The rocker responds to the restriction in the disclaimer in the manner described when this claim was read upon Defendant's Exhibit JJ.

(d) “means adjustably movable about a pivot and acting upon bodily movement in one direction to slidably engage either arm of said rocker and push it in one direction to an angular position at which the movement of said rocker is arrested by the collision

of said means the oppositely moving other arm of said rocker;” This is the tappet which, when loosened, is adjustably movable about its pivoting point or phantom axis. When tuning a station, this tappet slidably engages the nearest arm of the rocker and pushes it in one direction to an angular position at which the movement of the rocker is stopped by the collision of the tappet with the other arm of the rocker, which, being on the other side of its rotational axis, is oppositely moving.

(c) “and a spring for holding said means in a normally inoperative position;” These are the springs attached to the plungers at the bottom, and they hold the adjustable means (the tappet) in a normally inoperative position out of engagement with the rocker.

(d) “the axis of said means being substantially coaxial with the axis of said rocker when said means is in engagement with both of said arms.” The coaxial arrangement of the tappet and rocker when in complete engagement was admitted by plaintiff’s expert Schwarz [R. 348] in reference to Exhibit 1 with the complaint. This exhibit is the same as Defendant’s Exhibit LL [R. 246].

Claim 10 reads upon Exhibits LL and NN as follows:

(a) “In a mechanism for angularly positioning a control of a radio device, a combination including:” This is the preamble setting forth the general nature of the structure and stating its purpose.

(b) “a rotatable rocker comprising two shoulders lying on opposite sides of the axis of said rocker;”

Here the arms running along opposite sides of the rocker are referred to as “shoulders.”

(c) “a manually movable operating member; * * *” This is the short operating lever, which is manually movable by pressing in the button or key.

(d) “and a positioning element adjustably mounted on a pivot carried by said member;” This is the tappet which positions the rocker and it is adjustably mounted on the circumferential pivot carried by the plunger operated by the short lever.

(e) “said element adapted upon movement of said member” (the lever or plunger) “in one direction” (toward the rocker) “to engage one shoulder of said rocker and rotate said rocker to a position at which the movement of said rocker is arrested by the collision of said element and the oppositely moving other shoulder of said rocker;” The obvious application of this terminology is the same as in claim 8, previously discussed.

(f) “the axis of said element” (the phantom axis of the tappet) “and the axis of said rocker being substantially coaxial when said element is in engagement with both of said shoulders.” The substantially coaxial arrangement of the tappets and rocker in the completely engaged position was admitted by Mr. Schwarz at the trial.

Claim 10 responds to the limitation in the disclaimer printed on the back of the patent in the same manner as does the tappet in the *Associated* case, which was held to be the equivalent of the tappet shown in the patent.

In the other claims, the application of the terminology to Defendant’s Exhibits LL and NN is the same as in claims 8 and 10 excepting for the concluding phrases.

Claim 7 concludes: "said rocker constructed so as to admit at least a portion of said means" (the tappet) "between said arms" (of the rocker). In Defendant's Exhibits LL and NN there has been a mere reversal of this arrangement. Plaintiff's rocker is constructed so as to admit at least a portion of the central shaft of the rocker between the arms, or contact points, of the tappet. One or both of these parts must be shaped to fit the other in order to obtain the advantages of the coaxial relationship in the fully engaged position. Either one, or both, must have a central opening. To construct the tappet to admit at least a portion of the rocker rather than the rocker to admit at least a portion of the tappet, cannot avoid infringement. If such variations could circumvent a patent, no patent would have any value. The following decisions show the application of the law on this point:

"The expression 'reversal of parts' is not regarded as meaning literally a precise opposite positioning of all the parts of a patented invention. New parts differently positioned may be found in an infringing device which perform the functions and produce the results of parts of the invention, yet the device of a patent and an infringing device may not show any physical resemblance one to the other. This was particularly true of the contesting devices in *Union Special Machine Co. v. Singer Machine Co.* (C. C. A.) 227 F. 858. Placed side by side they looked wholly unlike, yet the theory of the invention could, after study, be traced and found in the wholly dissimilar parts of the infringing machine and there could be discerned the capital idea of the patent, which was a stop carried on a moving part of a sewing machine which prevented an unsafe needle shift when in the fabric and permitted a safe shift when

out of the fabric. And so here, we can trace and find in the defendant's device the capital idea of the inventor with means in changed positions—with the partial omission of one."

Allen et al. v. Wingerter, C. C. A. 3, 17 F. 2d 745 at 747.

"The only question presented, therefore, is whether appellant avoids infringing by placing the abutment member P and S on the slide instead of on the guide, and by forming the elongated slot D in the guide instead of the slide, and we are convinced that the question must be answered in the negative. In appellant's devices there is a mere reversal or transposition of parts used in the patent, but they produce the same functions in substantially the same way, and accomplish the same result as the patent. Infringement is not escaped by a mere change of forms without change of function. (Quoting many decisions.)"

Chicago Lock Co. v. Tratsch, et al., C.C.A. 7, 72 F. 2d 482 at 485.

Claim 9 concludes: "said rocker constructed to permit at least a portion of said means to pass beyond a line connecting the points on said shoulders at which the shoulders are contacted by said means." The plaintiff has constructed the tappet to permit at least a portion of the central shaft of the rocker to pass beyond a line connecting the said points of contact. This is the same sort of obvious reversal mentioned in the last of the quoted decisions.

When considering claim 11, the plaintiff's reversal applies to the structure mentioned in next to the last clause, which reads: "said rocker having a recess between said

arms so that the axis of said element and the axis of said rocker may be substantially coaxial when said element is in engagement with both of said arms;" In plaintiff's reversed arrangement, the recess is in the tappet instead of the rocker. The law with respect to such alterations will not permit the plaintiff to benefit by this kind of obvious change.

The last clause in claim 11 calls for "means operable from the external end of said member for holding said element in adjusted position." This, of course, is the adjusting or clamping means, and it is operable from the external end of said member (the lever or plunger) by raising up the lever button. The adjusting screw is a telescoping assembly, and a spring causes the knurled end of the screw to flip out for easy turning by the fingers of the operator so that after adjustment the screw may be tightened "for holding said element" (the tappet) "in adjusted position." This arrangement in Defendant's Exhibits LL and NN literally meets every requirement of the claim.

Defendant's Exhibits LL and NN are thus as much infringements as Defendant's Exhibit JJ.

The matter of whether the operating member necessarily needs to be a lever, does not arise with respect to plaintiff's tuners exemplified by Defendant's Exhibits LL and NN, because these tuners are operated by levers. The operating levers and the plungers that carry the tappets are made in two parts, instead of being integral as illustrated in the patent; but such division of parts does not avoid infringement. In this connection, *Corpus Juris*, Vol. 48, at page 309, states:

“Likewise infringement is not avoided by the division or separation of an integral part or element into two or more parts or elements, where the same work is done, or, in other words, the same function is performed or the same result is produced in substantially the same way or manner.”

Both of appellee's tuners must then be held to infringe the claims at issue.

V.

Conclusion.

This brief has shown that there had been a demand in the radio industry for many years for a satisfactory automatic tuner and that numerous inventors all over the world had endeavored to provide such a tuner before defendant's teachings became available. Many inventors tried to solve the problem by providing an adjustable tappet for positioning the rotatable control, but a peculiar difficulty arose that required the addition of extra parts or the use of tedious methods for adjusting the tappet. Unless such expedients were used, whenever a tappet was being set for a station near either end of the broadcast band, the tappet and positionable control would both turn upon engagement of the loosened tappet with the positionable member. Defendant prevented this unwanted rotation by making the axis of the tappet coaxial with the axis of the positionable control (rocker) when these members are completely engaged.

Defendant's solution of the problem was simple and effective and did not add any extra parts. Not only was defendant's solution unobvious to the many engineers and inventors who worked on adjustable tappet tuners, but plaintiff's own expert, Mr. Schwarz, was unable to point

to any instance in his long experience in which rotation of two members had been prevented by making their axes coaxial.

Defendant's construction was immediately adopted on a wide scale both for household and automobile sets and the plaintiff alone has made more than a million of them.

The evidence clearly establishes the presence of invention and proves the validity of the claims at issue.

There is no question that plaintiff has appropriated defendant's coaxial rocker and tappet construction.

It was shown at the trial by *undisputed* evidence that it makes no difference whatever by what means or what route the tappet is brought into engagement with the rocker, and that it is thus immaterial whether the tappet is moved by a plunger moving in a rectilinear path, or whether the tappet is moved in a curvilinear path as in the case when the operating member is a lever. None of the evidence presented on this point was before the court in either of the previous cases in this circuit involving this patent.

Plaintiff's tuners fully respond to the claims at issue.

Infringement is thus fully established.

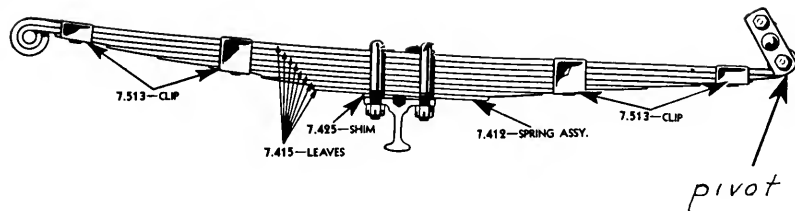
The evidence clearly requires that this Honorable Court hold the claims valid and infringed.

Respectfully submitted,

LEROY J. LEISHMAN,

Appellant, Pro Se.

JOHN FLAM,
Counsel.

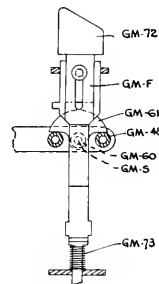
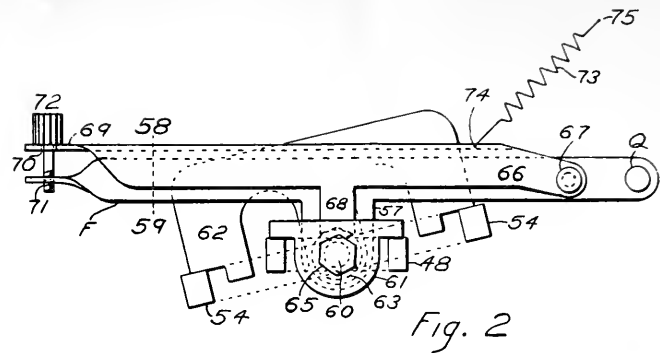


Leaf Spring pivots like a lever



COIL SPRING

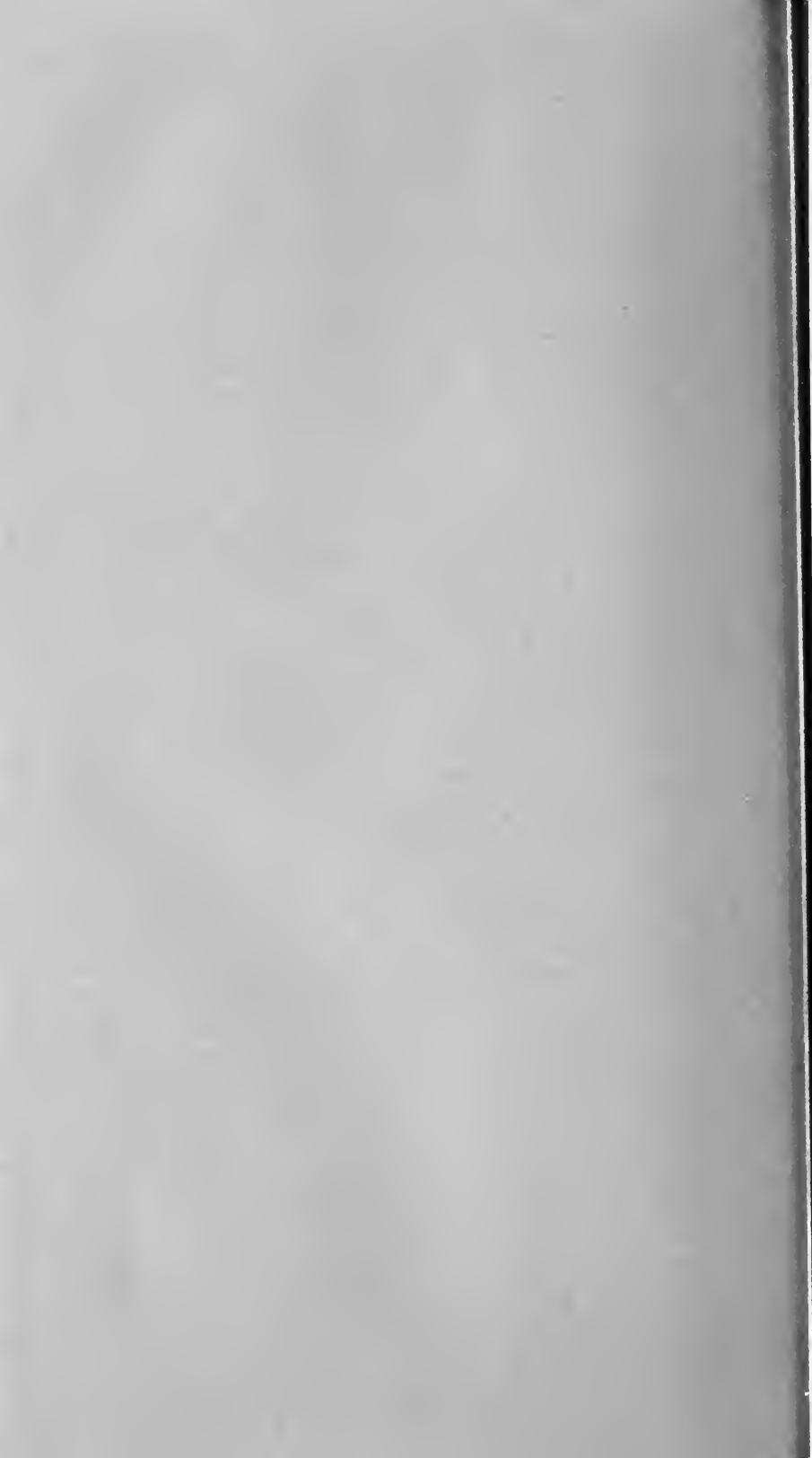
Coil Spring moves in straight line like plaintiff's plungers



Plaintiff's Exhibit 2 Tuner (left)







APPENDIX.

I.

Supplementary Discussion of the Opinion of the Court of Appeals for the Tenth Circuit in *Leishman v. the Richards and Conover Company*.

The present record contains ample evidence that appellant's solution to the "creeping" problem was not obvious to mechanics skilled in the art, and it is thus an established fact that a mechanic would not arrive at appellant's solution by means of such an analysis as that undertaken by the Court of Appeals for the Tenth Circuit. The decision of the said appellate court nevertheless influenced the court below. It may therefore be well to point out some of the more flagrant errors in the Tenth Circuit opinion.

The said opinion states (172 F. 2d 365 at 370):

"On rehearing, counsel for Leishman urged that the cause of creeping in Marschalk's device is obscure; and that neither such cause nor the solution of the problem would readily occur to a mechanic skilled in the art."

The court then refers to two figures prepared by the court and appearing on page 90 of the present record. These figures are intended to illustrate the Marschalk device; the rocker I, tappet J, lever H, and pin A for the tappet are intended to represent the corresponding parts 34, 44, 37, and 46, respectively, in Marschalk.

The opinion then goes on to explain why there is "creeping" in such a device. It stresses, for example, the relative position of pin A and an imaginary line XY, a line having no counterpart in Marschalk; nor does the Marschalk tappet have an apex. No reason is given why such a relation of the pin A, line XY, and the apex of

tappet J is important; in fact, there is no pertinence to it whatever.

The irrelevance of the position of the apex was emphasized in the affidavit of S. F. Duncan, Professor of Mechanical Engineering at the University of Southern California, as follows [R. 80-81]:

“The Court’s analysis of the lever system purported to be shown by Figs. 1 and 2 of the decision is the result of first, an imperfect understanding of the basic laws governing levers and second, the singular shapes accidentally or intentionally chosen by the draughtsman who drew the figures. It is a well known principle, as evidenced by the wide adoption of such text books as

1. Analytical Mechanics for Engineers by Seely and Ensign (John Wiley and Sons).
2. Kinematics of Machines by Guillet (John Wiley and Sons).
3. Elements of Mechanism by Schawb, Merrill & James, 6th Ed. Revised by Doughtie (John Wiley and Sons).
4. Kinematics of Machinery by Albert & Rogers (John Wiley and Sons).

that only the contour of contacting surfaces of interacting parts of a mechanism and not the shape of the rest of the contacting parts determines the transmittal of forces and any tendencies toward relative motion. Thus in Figs. 1 and 2 of the decision the tappet J was uniquely drawn as a triangle of a certain shape and size. In the decision, reliance appears to have been placed on the position of vertex G, Fig. 1, in the sentence which reads, ‘And when the rocker and tappet are positioned as in Fig. 1, the vertex G of the tappet, instead of being approximately at the line

XY, as in Fig. 2, is to the left of such line—.' Since the vertex G referred to has no functional contact with the rocker, I, Figs. 1 and 2, its location in space cannot influence the relative motion of the rocker and tappet."

The said opinion further says (172 F. 2d at page 371):

"When the rocker and the tappet are positioned as in figure 1, pin A is a greater distance above the axis of the rocker shafts and a greater distance to the right of the vertical line XY than when the rocker and tappet are positioned as in figure 2."

This condition, to which the Court later attaches great significance, is apparent only because the Court has made grievous errors in its drawings that a mechanic would never make. It will be noted that the Court has inadvertently placed the pin A in the wrong place in its Fig. 1. The tappet, of course, could not change its construction in turning from the position shown in Fig. 2 to the position shown in Fig. 1. The pin A would, accordingly, be exactly the same distance away from the lower edge of the tappet in both Figs 1 and 2. To demonstrate the serious error that misled the Court, a circle has been drawn around the pin A in Fig. 2 on the photographic reprint of the court's Figs. 1 and 2, appearing on page 1183 of the present record, the circle being of such size that its lower edge comes exactly to the edge of the tappet. A circle of exactly this same size has been drawn around the pin A in the Court's Fig. 1. It will be noted that this circle comes a very long way from the edge of the tappet. This large error in the Court's drawing is what makes the axis of the tappet and the axis of the rocker seem so much further apart in its Fig. 1 than its Fig. 2.

To show that the Court's conclusions about these axes are largely the result of the serious errors that it has made in endeavoring to simulate what a skilled mechanic would do, the tappet and rocker of Fig. 1 have been properly redrawn as Fig. 3 between the two figures from the opinion. It will be noted that the rocker is tilted at exactly the same angle as in the Court's Fig. 1, but the tappet has been correctly drawn so that the pin A is precisely the same distance from the lower edge of the tappet as it is in Fig. 2, as shown by the circle around the pin. When the figure is thus accurately laid out, the variation in the distance between the axis of the tappet and the axis of the rocker in Figs. 2 and 3 is barely discernible. Yet the grave incongruity in the Court's drawing is made the important reason assigned by the Court for the "creeping", for the Court says (p. 371):

"Since the more the rocker is tilted [as in Fig. 1] the greater becomes the non-coaxiality between the axis [D] of the rocker shafts and pin A and the greater becomes the tendency of the rocker to creep,".

Professor Duncan refers to these serious errors in the drawings as follows [R. 79-80]:

"Referring to Figs. 1 and 2 of the decision it is obvious to me as an engineer that an error in drawing the tappet J in its two positions, along with imperfect understanding of the laws of mechanics as taught in all schools and colleges of Engineering, led to a line of reasoning which contributed to the decision rendered by the Court. The error in drawing is apparent to the naked eye and is that the distance from point A to side BC of the tappet J is considerably different in Fig. 1 from what it is in Fig. 2. This change in the location of point A on the tappet J

would indicate a change in the physical dimensions of the corresponding part in an actual mechanism. Unless such change in dimension actually occurs, conclusions based on the two figures referred to could not be properly applied to the actual mechanism, in this case a tuner.”

The supposed reason for creeping, according to the analysis of the Court of Appeals for the Tenth Circuit, was set forth in a single paragraph which was quoted and discussed by A. Paul Sorber in the following portion of his affidavit [R. 86-89]:

“Reference is now made to the following quotation from the aforementioned opinion of the United States Court of Appeals for the Tenth Circuit:

“‘When the rocker and the tappet are positioned as in Figure 1, the distance from pin A to point B on the upper face of the rocker is greater than the distance from pin A to the point on edge C of the upper face of the rocker where the base of the tappet intersects such edge, referred to hereinafter as point O. And the distance from the axis of the rocker shafts to the point on edge C of the upper face of the rocker where the base of the tappet intersects such edge, referred to hereinafter as point P, is greater than the distance from such axis to point B. Hence, the lever from point P to the axis of the rocker shafts is longer than the lever from point B to such axis, and the level [lever] from point B to pin A is longer than the lever from point O to pin A. As a result, when force is exerted by downward pressure of the lever H through the tappet upon the face of the rocker, the downward force at point O has the advantage of greater leverage than the downward force at point B, and the resisting force of the rocker at

point B has the advantage of greater leverage than the resisting force of the rocker at point O.'

"The author of the foregoing paragraph had an entirely erroneous conception of levers and lever arms. The correct principles of lever arms are taught to science students in high schools, and these principles are contrary to the view held by the author of the above quoted paragraph. The distance from point B to pin A in Figs. 1 and 2 does not represent the 'lever' or lever arms of any of the forces applied. The distance from the point B to the axis D of the rocker is likewise not a correct lever arm. The aforequoted paragraph makes reference to the distances from the axes of the rocker and tappet to the points where these members engage on the right of these axes, but none of these distances referred to in the said paragraph is a true lever arm. The lever, or lever arm, of any force is the distance from the axis or fulcrum to the line of the force, taken at right angles to the line of the force.

"I have attached hereto a reproduction of page 20 from the text, Elements of Mechanism, mentioned on page 2 of this affidavit. [R. 84.] The scientifically accepted and verified principles of levers, as explained on the said page 20, is illustrated thereon by Figs. 23 and 24. These figures graphically show that the distance from the pivot to the point where the force is applied, is not the thing that determines the turning effect of the force. The physical levers are shown in full lines in these figures, but the actual lever arms of the forces applied are represented by the lines from M to C and from N to C in each of the figures. These lever arms in this case are thus much shorter than the distances from the pivots to the points where the forces are applied, and are the same as they would

be for the much shorter physical levers shown in dotted lines if the latter were positioned as shown.

“The errors in the conception of levers and leverage in the forequoted paragraph from the opinion of the Court of Appeals for the Tenth Circuit, are common errors among students who are just beginning the study of mechanics. Sometimes the actual length of a lever arm is only a small fraction of the distance from the axis to the point where the force is applied, and no helpful information whatever as to leverages can be gained by a mere consideration of the distance from a point where force is applied to the axis of the member against which such force is directed.”

Professor Duncan also discusses the appellate court's misconception of lever arms. He said [R. 81-82]:

“Referring again to the principle enunciated in the paragraph above [the same paragraph quoted in the foregoing Sorber affidavit] and Figs. 1 and 2 of the decision, the reasoning applied to the supposed lever arms from points P and B to the axis of the rocker shaft and points B and A to pin A is, though erroneous, a direct result of the accidental choice of the relative lengths of the contacting faces of the rocker and tappet. If the tappet face had been drawn longer it could have overlapped the rocker face in both positions and the limits of contact on the rocker face would have been from edge E to edge C [Figs. 1 and 2 of the decision) for all usual positions of the rocker. Such a change in the drawing would not affect the operating principle of the mechanism or its tendency to creep. By similar reasoning the rocker face, though overlapping both edges of the tappet face at all times would not affect the operation of the mechanism but would have required different state-

ments to be made in the decision relative to the supposed lever arms referred to above.

“The reference by the Court to such distances as ‘the lever from P to the axis of the rocker shafts’ and ‘the lever from point B to such axis’ must have been prompted by incorrect information or an imperfect knowledge and understanding of the fundamental laws of analytical mechanics.”

II.

Dr. Spotts, Expert Witness for the Richards and Conover Company, Did Not Know the Reason for Creeping, and His Theory Can Easily Be Shown to Be Wrong.

The glaring errors in the opinion of the Court of Appeals for the Tenth Circuit are further aggravated by the following statement at page 372 of its decision:

“Counsel for Leishman contend it is manifest that the cause of creeping is obscure because an expert witness for the defendant below testified that if the line of thrust from pin A is either to the left or right of the axis of the rocker shafts, creeping will occur, and that Leishman’s physical exhibits 26, 26A, 26B, and 26C [these are the same as Def. Exhs. L, L1, L2 and L3 in the present case] demonstrate that if pin A is not coaxial with the rocker shafts, although the pin travels downward in a line of thrust which intersects the axis of the rocker shafts, creeping will still result.

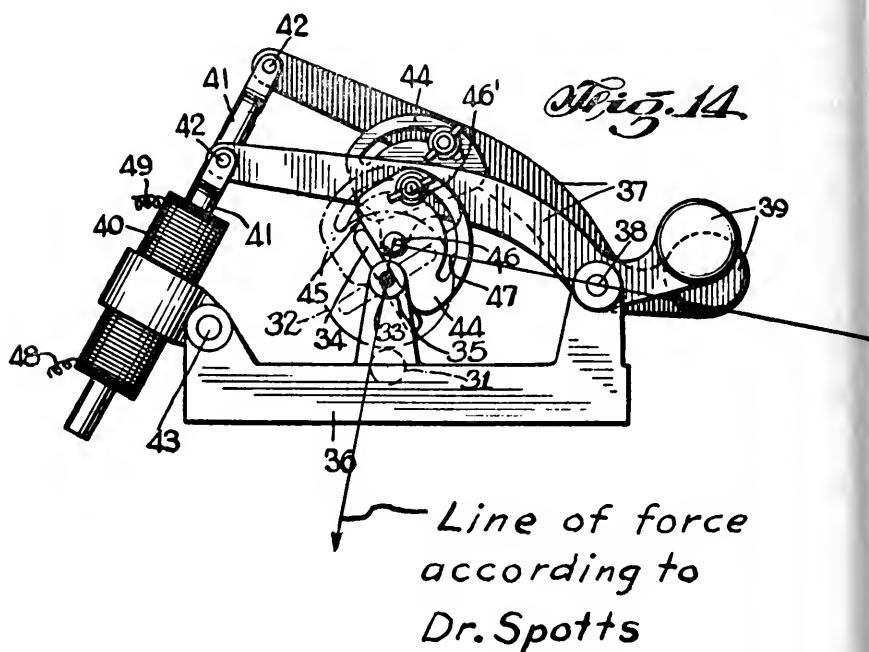
“It is obvious that when the expert so testified he was talking about a force from pin A traveling along

a straight line. In Marschalk's device, pin A travels in an arc."

As a matter of fact, the expert witness was specifically talking about the reasons for creeping in *Marschalk's particular device*. Had the appellate court examined the said testimony, which appears on page 213 of Vol. I of the Richards and Conover record, (which see) it would have found the expert referring to the parts in Marschalk's device by the very same numerals used in the Marshalk patent. The expert opposing the patent in that case was Dr. Spotts, Associate Professor of Machine Design at Northwestern University. To make it easy for the present court to follow his statements, and to verify that Dr. Spotts did not know the reason for creeping, Marschalk's Fig. 14 has been reproduced on page 10 of this appendix, where additional lines have been added to the figure in accordance with Dr. Spotts' instructions. Dr. Spotts testified as follows [page 213 of the printed Richards and Conover record, filed with Plaintiff's Supplemental Brief, and designated as part of the present record on appeal):

"A. The direction of the force that will cause creeping can be found in the following manner: Draw a straight line from pivot 38 to pivot 46. [Such a line has been added to the figure.] Then draw another line at right angles to that line through pivot 46. [This line has also been inserted.] *The force will lie along that perpendicular line.* If it falls to the left of pivot 33 then the rotation of the rocker will be *counter clockwise*. If the perpendicular line on the other one falls to the *right* of pivot 33, then there will be *clockwise motion*." (Emphasis added.)

It will be seen, however, that the said line of force falls neither to the right nor to the left of the pivot 33, but exactly through the center of the pivot. According to Dr. Spotts' theory, there should thus be *no* rotation in the Marschalk device. But everyone who knows anything about this case knows that there *is* rotation. If the right side of the *rocker* is *up*, there will be clockwise rotation; and if the *left* side of the rocker is *up*, there will be counter-clockwise rotation.



Leishman's patent issued in 1938. The trial of the Richards and Conover case, at which Dr. Spotts testified, took place in 1946—eight years later. Dr. Spotts' testimony shows that even at that late date he did not know the reason for creeping.

III.

Schwarz, General Motors Engineer, Advanced a Third Theory for Creeping Which Can Likewise Be Proven Erroneous.

On page 68 of this brief, it was shown that Schwarz admitted that he knew of no instance anywhere in which a coaxial relationship had been used to prevent unwanted rotation of engaging parts.

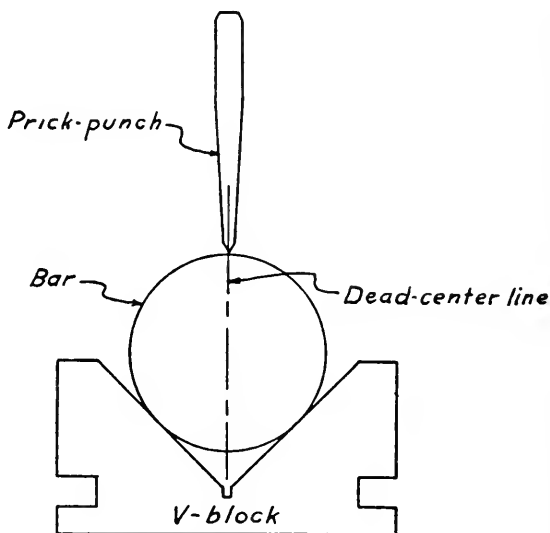
Obviously seriously compromised by Mr. Schwarz' damaging admissions, Mr. Lyon tried on re-direct examination to elicit from Mr. Schwarz an explanation that would make it appear that defendant's use of coaxiality was but the application of principles well-known to mechanics. Mr. Schwarz' elucidation of the allegedly pertinent principles, and his example of how a mechanic would apply them, constitute excellent evidence that such a mechanic would have found nothing in his previous experience to guide him if he had been faced with the problem before Leishman's solution was known. This testimony was as follows [R. 439-441]:

"Q. By Mr. Lyon: Mr. Schwarz, what does this engineering practice of eliminating moments, that technique, have to do with the fact that in this tuner having an adjustable tappet and rocker with coaxiality there is no walking movement of the operating member as demonstrated to the court here?

"A. This application of the old principle of moment arms and how they work and how they function would be in this case to prevent the tappet from jumping around, or, in other words, from moving when it came into relation with the rocker. And that, as I have tried to point out, is application of an old principle to produce a desired result, because without a moment arm the two pieces would either not move, or if actuated would move together.

“Q. If the moments were eliminated would their effect be as you have stated, if two members move that they move together, or if one moves the other will move with it?

“A. I think one is the converse of the other. In other words, if we consider one a transmitting means, and the other a receiving means, if the one was actually in dynamic movement the other would be expected to move with it if they were concentric. But if the one was not in movement and the other came up against it, it would not be considered to move in any other plane or in any other circle, because of the elimination of moment arms. I think I can explain by a simple example, if I may be permitted to do so, to try to make my explanation a little clearer: If a toolmaker, as I said before, had to drill a hole or prick-punch a bar, he would put it in a “V” block and would be sure to punch it in the dead center of that bar, otherwise the bar would move relative to the V block, and that would be the application of moment arms to movement, if he punched or drilled



it in the dead center it would not be expected to move.

“Q. Does a toolmaker practice that technique of eliminating moments in the ordinary course of practicing his profession?

“A. Yes, he does, when he takes a bar and puts it in a drill press, or if he wants to prick-punch it to drill it he puts it in the V block and then hits it or drills it in the dead center right through the center of the bar, and thereby introduces no upsetting moment arms causing no movement of the one relative to the other.”

In order that the court may fully understand this example, a sketch is printed on page 12. It will be noted that this example is in no wise an illustration of a coaxial relationship; in fact, the explanation of the example does not even make such a claim. Mr. Schwarz' explanation is to the effect that if the bar is punched in the dead center, as shown in the sketch, it will not move relative to the V-block. Notwithstanding the fact that no use is made in this example of a coaxial relationship, there is supposed to be something about this example, according to Mr. Schwarz, that would cause such a toolmaker to know that the difficulty exhibited in Marschalk's tuner could be eliminated by making the tappet coaxial with the rocker in the fully engaged position.

Such a toolmaker with a knowledge of a V-block and dead-center punching, might assume that if pressure is applied to a pivoted tappet on a dead-center line with respect to the tilted rocker, no trouble would occur. That the toolmaker would be very badly misled is clear from the demonstration that Mr. Leishman gave at the trial of the dismountable parts marked Defendant's Exhibits L, L-1, and L-3, that may be assembled and disassembled.

Exhibit L-1 is a rocker and L-3 is a non-coaxial tappet. The court will observe that when the rocker is tilted and the non-coaxial tappet L-3 is pressed straight down on a dead-center line, the tappet and rocker both flip around and tend to assume a horizontal position. Pressing down on dead center does not help a bit. But when Leishman's *co-axial* tappet L-2 is used, no trouble whatever occurs. Regarding this, the record says [R. 154]:

“Now, here is a non-coaxial arrangement and you press that down and it immediately flips around the same as the Marschalk device, but this coaxial arrangement solved the difficulty. You see you have no difficulty at all.

“Maybe Your Honor would like to try that.

“The Court: No, I watched you demonstrate it. Let us have those marked for identification.”

The unorthodox thing that Mr. Leishman did when he stopped all rotation of the loosely pivoted tappet and tilted rocker by making the axis of the tappet coaxial with the axis of the rocker, is well illustrated by the fact that Mr. Schwarz was unable to think of anything any more similar than what a toolmaker does when he punches a bar on dead center in a V-block.

Immediately after Mr. Schwarz cited that totally irrelevant, but supposedly pertinent, example, the following question and answer terminated his redirect examination [R. 441]:

“Q. To make the record clear, is it your testimony that this technique of eliminating moments in designing machines or pieces of apparatus is what you referred to as principles of symmetry or concentricity, which you stated were known and expected of

machine designers, to your knowledge, ever since you have been in school?

“A. That is what I meant when I testified to the symmetry, concentricity and coaxiality, and the laws of it for relative movement or non-movement.”

Not only was Mr. Schwarz unable to cite any example of an instance previous to Leishman's invention in which a coaxial relationship between two members had been used to prevent them from rotating, but in illustrating the principle which he said was involved, his example was far afield and there is little pertinence in his inadequate explanation of how a mechanic could have arrived at Leishman's structure through an application of known principles. Moreover, this explanation was made by an engineer who himself worked on an adjustable tappet tuner [R. 336] but failed to arrive at Leishman's simple structure and interposed two racks and two lugs between each tappet and the rotatable positionable member [R. 337-338], making a total of ten racks and ten lugs in a five button tuner [Plaintiff's Exhibit 3].

IV.

Appellee's Counsel Advances Still a Fourth Theory Which Is Incompatible With the Others.

In Plaintiff's Supplemental Reply Brief, an attempt was made to defend the theory of creeping advanced by the Court of Appeals for the Tenth Circuit as well as the different theory advanced by appellee's expert Schwarz. Nothing was said about the self-refuting theory of Dr. Spotts. But in attempting to support the other two theories, appellee's counsel evolved still a fourth. Counsel started with the figures from the Tenth Circuit opinion upon which appellant had drawn red circles to show that the

axis of the tappet was in the wrong place in Fig. 1. To these figures, appellee's counsel added *green arrows*. In the following portion of the said Supplemental Reply Brief, appellee refers to these green arrows as *lines of force f* [R. 1181-1182]:

“* * * As Judge Phillips stated, no substantial creeping is present in Figure 2. The reason for this is that such force *F* passes neither to one side nor to the other of the rocker axis *D*. On the other hand, such line of force *f* in Figure 1 passes well to the right of the rocker axis *D*, and since this represents an unbalanced force applied to one side of center pivoting or creeping will occur. Similarly, in Figure 3 the line of force *f* passes to the right of the rocker axis *D* and in Figure 4 it likewise passes to the right of rocker axis *D*. In both of these figures, as previously demonstrated, creeping will occur.”

In drawing the green arrows, plaintiff in each case extended these alleged lines of force directly from the pivot of the tappet, and in a direction at right angles to the surface of the rocker. There is no basis whatever for such lines in the present record nor in the record that was before Judge Phillips. The most significant thing about these newly-conceived lines of force, as represented by plaintiff's green arrows, is that they are different from the lines of force to which Judge Phillips attached importance, and different from the line that Dr. Spotts hypothesized. Relying upon his erroneous theories of levers, Judge Phillips explained creeping by saying [p. 371]:
“ . . . the downward force at point *O* has the advantage of greater leverage than the downward force at point *B*, and the resisting force of the rocket at point *B* has the advantage of greater leverage than the resisting force of

the rocker at point O.” While Judge Phillips thus had his lines of force extending through points B and O, the plaintiff now has them extending downwardly *from the pivot of the tappet* in a direction at right angles to the tilt of the rocker. The plaintiff purportedly tries to support Judge Phillips’ theory, but thus advances still a different theory of its own. What better proof could there be that the cause of creeping would not have been apparent to any mechanic skilled in the art in 1934 when appellant filed his original patent application?

Actually, it would make no difference whatever if the theory behind appellant’s invention had become clear to every schoolboy the day his patent issued. Most inventions are simple in retrospect. The important thing is that no one had a simple cure for creeping until Leishman provided that cure. Schwarz himself operatively interposed two racks and two lugs between every tappet and the rotatable member, as shown by the sketch of his Exhibit 3 tuner on page 30 of this brief.

V.

Important Parts of the Record Referred to in the Foregoing Brief.

A. Mr. Schwarz Admits That the Axis of the Tappet and the Axis of the Rocker Are Coaxial in Plaintiff’s Exhibit 2 Tuner to the Complaint, Now Defendant’s Exhibit JJ.

“Q. (By Mr. Lyon): Mr. Schwarz, I show you Defendant’s Exhibit JJ, and Plaintiff’s Exhibit No. 2 to the complaint in this case, and ask you if you are familiar with those. A. Yes, I am.

“Q. Do you know who designed those tuners?

"A. Well, I participated in the design of them and directed intimately a good portion of the design.

"Q. Is General Motors at the present time equipping its current models with tuners like those shown by these last mentioned exhibits?

"A. Some of the current models have this particular type of tuner.

"Q. Can you tell us what one?

"A. The Chevrolet and the Oldsmobile and the Cadillac.

"Q. You recognize this tuner as of the type which has been referred to here as having an adjustable tappet and a rocker? A. Yes, I do.

"Q. Will you state whether or not in tuners of that type as you have designed them and General Motors has produced them, the centers of those tappets are arranged so that they are symmetrical or concentric or identical with the centers of the rocker?

"A. Yes, I believe they are concentric.

"Q. You understand that that has been referred to here as coaxiality where those two centers register? A. Yes." [R. 339-340.]

B. Mr. Schwarz Admits That the Axis of the Tappet and the Axis of the Rocker Are Coaxial in Plaintiff's Exhibit 1 Tuner to the Complaint, Now Defendant's Exhibit NN.

"Q. (By Mr. Lyon): Mr. Leishman has called attention to the buttons, or whatever you call them, that appear on the tuners such as shown by Exhibit NN, and Exhibit 1 to the complaint; what are those buttons for?

"A. It is an ornamental feature that Chevrolet wanted something different. They wanted not to

have to pull a button off to set up the station, so that we hinged the buttons to make it easier to get at the lock-up screws. You pull the button up so you can get to the screw, and then the lock-up screw then becomes available. If you didn't do that, you would have to pull the button off.

"Q. Is that tappet in that type of tuner carried by that button?

"A. No; the tappet is carried by the plunger.

"Q. You have stated in connection with the tuner of the type constituting Exhibit 1 to the complaint, that it has a virtual center. Does the tappet have a pivot which is coaxial with the axis of the rocker?

"A. The tappet's pivot is coaxial with the axis of the rocker." [R. 347-348.]

C. Testimony Regarding Tuners That Were on the Market Prior to Leishman's Combination.

From page 174 of the record:

"Mr. Flam: I will reframe the question and ask whether there are any other tuners that came out after this Zenith-Schaefer tuner came out and before your patent was issued?

The Witness: Either shortly after the Zenith tuner appeared or about the same time there were some motor-driven tuners on the market of the same general class as that shown in the Jacke patent. They didn't operate in the same way but the motor turned the condenser and the dials in response to the pressing of buttons by the operator of the set.

"Q. (By Mr. Flam): Now, how long did they stay on the market?

"A. They were on the market only about two years too. They were in the market about the same

length of time that this Zenith tuner, Exhibit I, was on the market.

“Q. Did you state about when the Zenith tuner was on the market?

“A. I think about 1927 and 1928 or '28 and '29. It was in the period between '27 and '29.”

From pages 179 to 181 of the record:

“Q. (By Mr. Flam): Now, aside from these tuners that you mention that were on the market before the Crosley device came out, were there any others, any other types of tuners?

“A. Well, about 1936 the motor-driven tuners re-appeared on the market. I don't know that they were exactly the same construction as those that appeared some seven or nine years earlier, but they were motor-driven tuners that were introduced on the market about 1936. They were for sale in 1936. And also about that same time the so-called telephone-dial type tuners appeared on the market.

“Q. Can you find any patents in this book of patents that we have had to illustrate the telephone-dial type of tuner? I want to call your attention to No. 17, I think, or No. 16.

“A. Yes. No. 16 shows a patent issued to Fitzgerald and it shows a dial resembling in a general way, the dial on a telephone, and the patent to Underwood is of a similar construction, but instead of putting your finger in little recesses or holes as you do on the Fitzgerald device, it is provided with a lever that you would turn in the same manner that you would turn your finger in operating the Fitzgerald mechanism.

“The Court: The Underwood patent is No. 17, isn't it?

“The Witness: Yes, that is right, your Honor, Underwood is 17.

“Q. (By Mr. Flam): Did any of these devices that you designate as telephone dial type come into commercial use?

“A. Yes; they became quite common in 19—well, they were first introduced and used in a limited way in 1936 and they became very common in 1937. Most manufacturers used them in their lines.

“Q. Now, what made it possible for them to—do you know what made it possible for them to become so popular in the later years?

“A. Well, in and of themselves they weren't accurate at all. They were not commercially usable but they appeared in 1936, both the motor driven tuners and the telephone dial type tuners because about 1936 an electrical circuit was developed, called automatic frequency control, which compensated electrically for the mechanical inaccuracy in these tuners. Fitzgerald's mechanism was very inaccurate and the motor driven tuners were not of sufficient accuracy—didn't provide the selectivity required, but if you got into the approximate position, if you turned the dial by means of the automatic tuner to just approximately the right position the automatic frequency control would electrically pull the circuits into tune and that made it possible to use tuners that were otherwise inaccurate and which hadn't been commercially usable before.”

From pages 182 to 184 of the record:

“Q. (By Mr. Flam): What company do you remember marketed the telephone dial tuner in 1936 and 1937?

"A. In 1936 there were only two or three concerns that came out with them. The first, I believe, was Philco. We have their announcement here as one of the exhibits, and Grigsby-Grunow also introduced one in 1936.

"Q. Is this the announcement you have in mind about the Philco telephone dial type of tuner?

"A. That is a photograph of the folder, folded in such a way that it shows all the pages of the original folder. I picked one up at the American Radio Company then located between Broadway and Hill on 8th Street. Their stamp is on the back of this folder and it shows in the photograph."

* * * * *

"Q. (By Mr. Flam): Were motor driven tuners and telephone dial tuners used in the succeeding year's models?

"A. Yes, they were very common in 1937. Most manufacturers put out one or the other. The telephone dial tuner being naturally the cheapest was the most popular.

"Q. How about 1938?

"A. No, they came out in—they were 1938 models but the 1938 models were nearly always shown at the radio show in June, the national radio show and so the 1938 models would always be announced—were announced in 1937.

"Q. Do you have anything that will show how extensive the use of such tuners was in 1937?

"A. There is a page in the book of exhibits in the Associated case, volume 3, that is a re-print of, I believe, page 21 of the June number for 1937 of Radio Retailing and it shows a double spread containing a picture of the dials and controls on the new

sets that were coming out and there is an account there of the popularity of the type of these sets—of the sets of this type, rather.

“There is a volume, Mr. Flam, in that case on the table there.

* * * * *

“The Clerk: Defendant’s Exhibit V for identification.

“(The document referred to was marked Defendant’s Exhibit V for identification.)”

From pages 187 to 188 of the record:

“Q. I show you this book entitled ‘Automatic Frequency Control Systems’ by John F. Rider, including the jacket. What has that got to do with the automatic frequency circuit controls that you have been talking about?

“A. The jacket or book? You mentioned the jacket and the book.

“Q. The jacket and the book.

“A. Why, the jacket—

“Q. What was the book for? Did it have anything to do with these automatic frequency controls that you are talking about?

“A. Yes. This book was put out to acquaint service men in the radio industry throughout the country, with the automatic frequency control systems so that they could repair these sets and so that they would understand them. That was the purpose of the book.

“Q. What are those pictures on the jacket? Can you identify them?

“A. The pictures on the jacket are of more telephone dial tuners and the dials of some motor driven tuners that were common at the time the book was published. This book, of course, speaks for itself but

it shows that it was originally printed in October of 1937. It was copyrighted in 1937 by John F. Rider.

“Q. I would like to have you identify those features which are particularly pertinent in connection with this—with the importance of utilizing automatic frequency control circuit with the telephone dial type of radio tuning. I don’t want you to read it. I just want you to note the pages so that the court may read them afterwards.

“A. Well, in the foreword there is page 7 and page 8 designated by Roman numerals—small Roman numerals and then in the introduction pages 1, 4 and 5 in the text of the book and page 63; pages 87 to 92. Pages 100, 102, 127, 128, 129, 131 and 141.

“Mr. Flam: I offer those pages of the book referred to by the witness in evidence and the cover.

“The Court: They will be received as Defendant’s Exhibit W and W-1.

“(The documents referred to were marked Defendant’s Exhibits W and W-1 and received in evidence.)”

D. Testimony Showing That It Is Immaterial Whether the Tappet Moves in a Straight Line or in an Arc.

From pages 164 to 169 of the record:

“Q. (By Mr. Flam): Now, in connection with that model, Mr. Leishman, does it make any difference in your device whether the tappet is moved in an arc to contact the rocker or whether it is moved in a straight line to contact the rocker?

“Mr. Lyon: I object to that, your Honor. The witness is asked if it makes any difference in his device. We have a decision here, two decisions of the Circuit Court of Appeals on the point and it is asking him for a conclusion without the facts being stated on which the conclusion is to be based and I

think it is a conclusion of law when he asks him if it makes any difference in his device. I don't know exactly. It is not a very illuminating question, but if it is intended to be a statement derogatory of the court of appeal's decisions, why, I object to it as out of order.

"Mr. Flam: I am not offering it in derogation of any opinion. I am trying to show here that there are other factors not considered by the Circuit Court of Appeals which makes it necessary for them to revise that opinion.

"The Court: Objection overruled.

"Q. (By Mr. Flam): Will you answer the question?

"A. No, it makes no difference at all by what route or course the tappet comes into engagement with the rocker.

"I think that the models in the L series containing the rocker L-1 and the tappet L-2 demonstrate that you can bring it down in an arc or you can bring it down straight or you can bring it down from the other side and it is all the same story. It doesn't make any difference. It doesn't make a bit of difference to my device in the operation of the device, what path the tappet takes to and from that coaxial position. The point is, you have got to have it there when the adjustment is made and then you have got to move it out of the way so that the rocker can turn and when the device is to be tuned again the rocker has to be pushed down into engagement and the route, I think, is immaterial. We have a chart here which further illustrates that point.

"Q. Will you demonstrate from the chart that point?

"A. Yes, sir.

"Q. If you will.

"A. Yes. (Showing document to Mr. Lyon.)

"Q. (By Mr. Flam): May I ask the clerk to mark this for identification?

"Mr. Lyon: May I see it for a moment?

"The Court: What does the chart purport to be? I was looking at one of these models.

"Mr. Flam: The title of the chart is the path of the tappets to and from the coaxial position is optional with the designer and I am having it marked for identification.

"The Court: I suppose it is just illustrative of what the defendant has testified to?

"Mr. Flam: Yes; and there are other points I would like to show.

"The Court: It may be so marked, Mr. Clerk.

"Mr. Lyon: May it be subject to the same objection, your Honor, that I made with reference to the last question?

"The Court: Yes.

"Mr. Lyon: Very well, your Honor.

"The Court: This is simply used as an illustration but it is a part of his answer and you objected to it.

"Mr. Lyon: Yes.

"The Court: And I suppose your objection goes to this also?

"Mr. Lyon: Yes.

"The Clerk: Defendant's Exhibit N for identification.

"(The document referred to was marked Defendant's Exhibit N, for identification.)

"Q. (By Mr. Flam): Go ahead and explain it, Mr. Leishman.

“A. The second figure from the bottom, it will be noticed, is the figure, the Figure 2 of the patent, colored so that the tappet is identified by the red color and the rocker is green and the lever or manual operable member is in blue, and the path that the rocker [tappet] takes to and from the coaxial position is indicated by the curvilinear line passing through the center of the tappet and center of the rocker. Of course that curvilinear line will be an arc around the pivot as the center. Now, suppose you just turn the tuner around the other way. Then it would look like the figure at the bottom on this chart and you would have—and the path of the tappet would be exactly opposite from what the path is when it is oriented in the position shown in the patent. And I think it is obvious that it makes no difference to the operation of my device if you turn it around and have it face north instead of south and in that case the curvilinear path turns to the right in one case and turns to the left in another case and yet the device operates precisely the same and it makes no difference to the operation of the device whether the path turns to the left or to the right.

“I think it is clear that any intermediate position would not affect the operation of the tappet. Then I have shown other modifications which I think also are obviously operable.

“I have changed the shape of the lever here and pivoted the lever above the position shown in the patent drawing. In that case the path that the tappet would take to and from the coaxial position is indicated by the curvilinear line passing through the center of the tappet in the second figure from the top of the chart.

“In the figure at the top on this chart the lever has been extended and the curvilinear path is more

nearly straight, but in all cases the tappet can be moved out of engagement with the rocker and it can be moved back into engagement with the rocker and no matter where you put the pivot of the lever the same thing will take place, whether you put it on this side or whether you put it on that side or whatever other guides you might make for the plunger portion—this portion of the tappet that extends down is a plunger, a reciprocating member that goes in and out of the rocker. Then on these flaps I have arranged the—I am in my own way here no matter how I turn. Mr. Flam, will you hold this one back for me if you don't mind? I have arranged it here so that you can just move another portion of the drawing so that it can be superimposed over the patent, over the enlargement from the patent drawing and that shows the tappet mounted on a plunger and, of course, that will take it straight up and down. It moves from the coaxial position shown out of engagement, and when you press it down it will move it back into engagement in a straight path which is the exact average between the path shown in the third figure from the top of this chart and the figure at the bottom on the chart. In this case guides have been provided both above the rocker—the guides to keep the tappet moving in a rectilinear path instead of being curvilinear. In the other drawing it is rectilinear and then on the other flap we have drawn the plunger so it passes all the way through the rocker, but the tappet in this case is shown mounted on the plunger and we have the guides above in this case and the other one is below the rocker. But the motion is just the same and I think that chart thoroughly demonstrates that it is absolutely immaterial to the operation of the device whether the tappet moves away from its coaxial position and back again

in a curved path or how big the curve is and what direction the curve goes or whether it is a straight line which is an average of all the curves.

“Mr. Flam: I offer the chart in evidence.

“Mr. Lyon: Same objection as previously noted when the chart was offered, your Honor.

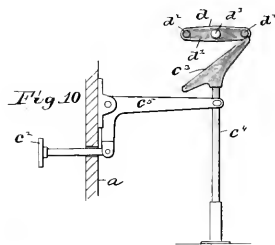
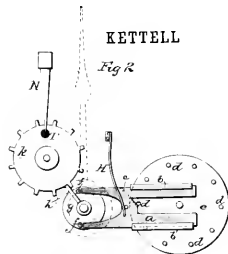
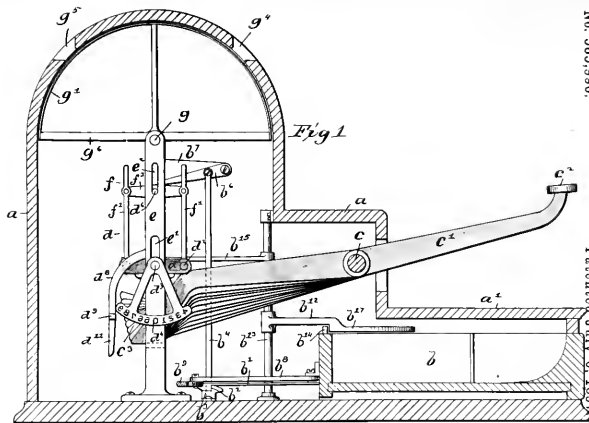
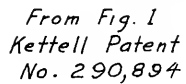
“The Court: Same ruling. Objection overruled.

“The Clerk: Defendant’s Exhibit N in evidence.

“(The chart referred to was marked Defendant’s Exhibit N, and was received in evidence.)”

F. WOODBRIDGE.
CASH REGISTER AND RECORDER.

Patented July 6, 1897.



Woodbridge's
Fig. 10
(left)

No. 12,485

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

LEROY J. LEISHMAN,

Defendant-Appellant,

vs.

GENERAL MOTORS CORPORATION,

Plaintiff-Appellee.

BRIEF FOR APPELLEE.

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FILED

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PAUL P. O'BRIEN, CLERK

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No. 12,485

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

LEROY J. LEISHMAN,

Defendant-Appellant,

vs.

GENERAL MOTORS CORPORATION,

Plaintiff-Appellee.

BRIEF FOR APPELLEE.

This is an appeal from a declaratory judgment [R. 56-58] of the United States District Court for the Southern District of California, Central Division, holding claims 7 to 11, inclusive, of Reissue Patent No. 20,827 invalid.

Appellee on September 20, 1946, filed its complaint [R. 2-14] against appellant, a resident of the Southern District of California, alleging the existence of an actual controversy between the parties, alleging the invalidity of claims 7 to 11, inclusive, of Reissue Patent No. 20,827, and alleging that appellee did not infringe the patent. On February 20, 1947, appellant answered [R. 23], having previously filed on November 19, 1946, a counterclaim [R. 15-18] wherein validity and infringement were alleged. Appellee replied to the counterclaim [R. 18-22] on January 10, 1947.

After trial of the cause, the court below, on July 29, 1949, filed its memorandum of decision [R. 41-50], thereafter making its findings of fact and conclusions of law [R. 50-55] and rendering the judgment appealed from.

Following the judgment, appellant moved under Rule 52(b) of the Federal Rules of Civil Procedure to amend the findings, conclusions and judgment, and under Rule 59 for a new trial [R. 59-97]. On November 2, 1949, the court below denied these motions [R. 99], and appellant gave its notice of appeal December 1, 1949 [R. 99].

Jurisdiction.

The jurisdiction of the District Court was based upon the Declaratory Judgment Statute, *Jud. Code, Sec. 274(d)*, 28 U. S. C. A., Sec. 400, and upon *Jud. Code, Sec. 24(7)*, 28 U. S. C. A., Sec. 41(7), as the actual controversy arose under the patent laws. The jurisdiction of this court is based upon *Section 1291* of new *Title 28, U. S. C. A.*

Statement of the Case.

The extended statement of appellant is replete with argument and assumption which will be considered by appellee in subsequent portions of this brief. This court has considered the merits of the patent in suit twice before and in each instance has found the patent not infringed by devices patentwise precisely the same as the devices of appellee here in suit. *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722; *Leishman v. Radio Condenser Co., et al.*, 167 F. 2d 890. In each such case appellant petitioned to the Supreme Court for writ of certiorari, and in each case the petition was denied. 320 U. S. 816, 88 L. Ed. 493; 335 U. S. 891, 93 L. Ed. 429. Additionally,

appellant has litigated his patent in the Tenth Circuit against devices the same patentwise as the devices of appellee and there his patent was held invalid. *Richards & Conover Co. v. Leishman*, 172 F. 2d 365. There again appellant petitioned the Supreme Court for a writ of certiorari and such petition was denied. 336 U. S. 952, 93 L. Ed. 1107.

No outstanding decision exists in favor of the patent in suit either on the issue of validity or on that of infringement. In *Leishman v. Associated Wholesale Electric Co.*, 36 Fed. Supp. 804, Judge Harrison of the Southern District of California, Central Division, held the patent invalid for want of invention. This decision was modified in *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722, to provide for a holding of non-infringement and, as so modified, affirmed, this Court stating at 727:

“Since the claims, if valid, are not infringed, the question of their validity need not be decided. The judgment declares that the claims ‘are invalid for want of invention.’ In the view we take, the declaration is unnecessary. As to its correctness or incorrectness, we express no opinion.”

In *Leishman v. Radio Condenser, et al.* (D. C., S. D. Cal., C. D., Civil Action No. 4395-B), Judge Beaumont, following the decision in the *Associated Case, supra*, held the patent not infringed on summary judgment and enjoined appellant from suing customers of plaintiffs therein on the patent. His decision was affirmed by this Court

in *Leishman v. Radio Condenser Co., et al.*, 167 F. 2d 890, which expressly reaffirmed its decision in the earlier *Associated Case*, stating at 892:

“Leishman contends that the California court erred in following our decision in the *Associated* case. There is no merit in this contention. Our decision has not been reversed or overruled. The California court was not at liberty to overrule it. We could overrule it if we thought it was wrong, but, after reconsidering it, we think it was right and now reaffirm it.”

This Court also modified the injunction by expanding its scope, and the injunction still stands at this date.

In *Leishman v. Richards & Conover Co.* (D. C., W. D. Okla., No. 2155), the District Court held the patent valid and infringed, but this decision was reversed in *Richards & Conover Co. v. Leishman*, 172 F. 2d 365, wherein the Court of Appeals for the Tenth Circuit held the patent invalid for want of invention. On rehearing, the same court reaffirmed its earlier decision.

In the instant case in the court below, Judge McCormick made no findings of fact, conclusions of law, or judgment respecting infringement but held the patent invalid as anticipated by the prior art and as lacking invention. In so doing, he followed the practice approved in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U. S. 327, 89 L. Ed. 1644, which decision came down subsequent to the decision of this Court in the *Associated Case*. Judge McCormick, in reaching his decision that the patent in suit is invalid, considered the *Richards & Conover Co. Case* in the Tenth Circuit as persuasive but not controlling, and agreed with Judge Harrison's original decision in the *Associated Case*.

In spite of the complicated litigious history of the patent in suit, the issue on this appeal is not complicated. Appellant's sole contention is that he was the first to conceive axis alignment or coaxiality in a radio tuner, and that his reissue patent entitles him to prevent the alignment of axes in radio tuners by others. Judge McCormick below determined as a matter of fact that coaxiality in a radio tuner does not constitute invention. The Court of Appeals for the Tenth Circuit likewise so held. Judge Harrison in the *Associated Case* reached the same conclusion. Additionally, this Court has twice held that, if valid, appellant's patent could only cover radio tuners including levers and could not cover plunger-type radio tuners such as those of appellee. Thus, in order that appellant prevail on this appeal, wherein he requests that this Court hold the patent both valid and infringed, this Court must reverse Judge McCormick, disagree with the Court of Appeals for the Tenth Circuit, disagree with Judge Harrison, and overrule two prior decisions of its own.

The title of the patent in suit [Deft. Ex. A, R. 799] is "Means and Method for Turning Rotatable Objects to Predetermined Positions." The patent states that the purpose of the invention is to provide a simple apparatus "for turning dials, shafts, and the like to the particular settings." The patent points out that the application of this invention to radio and television makes it possible automatically to tune in a radio broadcasting station and an associated television broadcasting station.

A radio receiver is customarily provided with a means (usually a variable condenser or gang of variable condensers) which is rotated to tune the radio receiver to a particular broadcasting station to be received. Presum-

ably, a television receiver would have a similar tuning means which upon rotation would tune a television receiver to a television broadcasting station. The reissue patent in suit shows a mechanical device which was intended by the patentee simultaneously to tune both a radio receiver and a television receiver in response to the movement of a single lever. The reissue patent is not concerned with the electrical characteristics of a radio or of a television apparatus, but rather is solely concerned with a mechanical device for automatically turning, in response to the operation of a lever, shafts, and thus the tuning controls of a radio and television apparatus to the particular positions necessary to tune in the predetermined radio broadcasting station and its associated television broadcasting station. On the other hand, the devices complained of herein are radio receivers only and have no associated television apparatus.

The mechanism of the Leishman reissue patent, which has, of course, been considered by this Court before, may be readily understood from Figure 2 of the drawings of the patent in suit. It will be seen that the mechanism of the patent includes a lever F pivoted at Q. The lever F has a projection to which is pivoted a cam or tappet 61. A rocker 48 is mounted upon a shaft S which is intended to be connected to the tuning means of a radio receiver. Similarly, pivoted to the lever F is a second cam or tappet 62, and another rocker 54 is mounted upon a shaft 25 distinct from the shaft S, which second shaft is intended to be connected with the tuning means of a television receiving apparatus.

The angular position of the cam or tappet 61 on the lever F and also the angular position of the cam or tappet

62 on lever F may be fixed by a friction lock actuated by a second lever 66 pivoted on the lever F and held by a set screw 71. The spring 73 normally holds the lever assembly up and out of the way.

With this apparatus, after the tappets 61 and 62 have been locked to desired positions on the lever F, whenever the lever F is pressed downwardly, as by the operator's finger on the top 72 of the set screw 71, the tappets will contact the rockers 48 and 54 and simultaneously rotate them. If the tappets have been properly set, this rotation of the rockers 48 and 54 is supposed to move, respectively, the shafts S and 25 and hence the tuning means of the radio receiver and television receiver to the correct positions for bringing in the station.

Thus, the device of the patent in suit consists of a *lever* adjustably mounting two *tappets* which are movable by the lever into contact with two *rockers* attached to shafts to be positioned by a movement of the lever.

The two tuners which are charged to be infringements of the reissue patent in suit are Plaintiff's Exhibits 6 and 7 [R. 109]. Neither of these tuners is at all concerned with tuning in a television station and therefore neither of these tuners includes any means for such tuning.

Referring to Plaintiff's Exhibit 6, it will be seen that the device consists of a push button engaging a plunger which carries a tappet adjustably movable in an arcuate guideway. A rotatable rocker is mounted upon a shaft which is connected with the tuning means of a radio receiver. The position of the tappet with respect to the plunger may be fixed by a locking clamp actuatable by a screw, and a spring is provided to hold the plunger and tappet normally out of the way.

In the Exhibit 6 tuner, after the tappet has been locked in a certain position on the plunger, whenever the plunger is pressed inwardly, as by the operator's finger on the push button, the said tappet will contact the rocker and rotate the rocker and shaft to a predetermined position to so actuate the radio tuning means that the selected radio station will be brought in. Since the tuner is not concerned with a television receiver, no second tappet is provided and no second rocker is provided.

Plaintiff's Exhibit 7 is similar to the aforescribed tuner, having a push button, a plunger, a tappet, and a rocker mounted upon a shaft, the plunger assembly being held out of the way by a spring. However, the tappet is not mounted to adjustably slide in a guideway, but rather is pivotally connected to the plunger to adjustably move about a pivot and to be clamped into proper position by a clamp. This tuner, also not being concerned with television tuning, provides no second tappet or second rocker.

In the patent in suit, Defendant's Exhibit A, Figure 2, the rocker shafts S and 25 are aligned with the pivot points of the tappets 61 and 62 when the respective tappets and rockers are in fully engaged positions. In appellee's tuner Exhibit 6, the center of rotation of the tappet when said tappet is in full engagement with the rocker is aligned with the shaft, and similarly in the tuner Exhibit 7, the pivot point of the tappet and the shaft of the rocker are aligned in fully engaged position. Such axial alignment admittedly has nothing to do with the actual shaft positioning, which is determined by the

angular disposition of the tappet when it engages the rocker. However, in normal every day operation it may occasionally be desired to change the angular disposition of a particular tappet so that on depression of its push button a different station will be tuned in than previously. For example, one of the push buttons on a radio set has been bringing in KPO. It is desired that that push button bring in a different station. The tappet for that particular push button must be reset angularly to accomplish this, and it is with this operation that appellant claims the aforesaid alignment is important. He asserts that absent such alignment, there is a tendency for the tappet to creep, or detune during such resetting. Appellant contends that such aligned condition, which he defines as coaxiality, constitutes a patentable invention properly secured to him in his patent, and that this invention has been appropriated by appellee in the aforescribed alignments in the tuners, Exhibits 6 and 7.

As stated before, Judge McCormick below did not rule on infringement, holding as a matter of fact that the coaxiality claimed by appellant was anticipated by Marschalk Patent No. 2,072,897 and Schaefer Patent No. 1,906,106, and by Cunningham Patent No. 1,930,192, and that axis alignment or coaxiality in radio tuners did not constitute invention [Findings of Fact Nos. 8 and 15, Conclusion of Law No. 3; R. 52-54]. In so holding, he agreed with the Court of Appeals for the Tenth Circuit and with Judge Harrison of the District Court for the Southern District of California, Central Division.

Summary of Argument.

I. Judge McCormick's findings of anticipation and non-invention are findings of fact and should not be disturbed unless unsupported by substantial evidence and clearly erroneous.

II. Substantial evidence exists in the record proving that the patent in suit is anticipated by Marschalk Patent No. 2,072,897 and by Schaefer Patent No. 1,906,106, and by Cunningham Patent No. 1,930,192.

- (a) The general combination of a lever adjustably mounting a tappet which is movable by the lever into contact with a rocker attached to a shaft to be positioned is disclosed in the prior Marschalk patent.
- (b) Axis alignment or coaxiality in a radio tuner is disclosed in the prior Schaefer patent.
- (c) The lever-tappet-rocker combination of the patent in suit, wherein the axes of tappet and rocker are aligned or coaxial, is disclosed in the prior Cunningham patent.

III. Substantial evidence supports the finding of the court below that the Leishman patent is lacking in invention, which finding agrees with the prior decisions and should not be disturbed.

- (a) The evidence shows that there was no long-felt want for the alleged invention, no period of unsuccessful effort on the part of others to achieve the alleged invention, and no superseding by the invention of that which had gone before.

- (b) The coaxiality of the patent in suit is the mere utilization of a common and well-known expedient for avoiding moment arms.
- (c) As a matter of comity this Court should follow the decision of the Court of Appeals for the Tenth Circuit in *Richards & Conover Co. v. Leishman*, 172 F. 2d 365.

IV. The patent in suit is for a different invention than was the original patent from which it reissued and hence is invalid.

- (a) Appellant's persistence in asserting for his patent a scope held invalid by this Court in *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722, should result in a holding of invalidity thereof by this Court.
- (b) The coaxiality now claimed by appellant to constitute the invention of his reissue patent is not the same invention his original patent intended to claim and secure.

V. Even should this Court hold the patent in suit valid, it should follow its prior decisions and hold the patent not infringed by appellee.

ARGUMENT.

1. The Findings of the Lower Court That the Patent in Suit Is Anticipated and Is Lacking in Invention Are Findings of Fact and, as Such, Should Not Be Disturbed Unless Clearly Erroneous and Unsupported by Substantial Evidence.

The court below held the patent in suit invalid. Such holding was based upon the finding of fact that the patent is anticipated and is lacking in invention [Findings of Fact Nos. 8, 9 and 15, R. 50-54.] In this the court below agreed with the decision of the Court of Appeals for the Tenth Circuit in *Richards & Conover Co. v. Leishman*, 172 F. 2d 365, and agreed with the previous decision of Judge Harrison in *Leishman v. Associated Wholesale Electric Co.*, 36 Fed. Supp. 804. Yet appellant briefs his case as though this appeal were a *de novo* proceeding, and contents himself primarily with numerous references to evidence which in his opinion is indicative of invention. It is submitted that in this appellant misconceives the nature of the appellate function of this Court.

At least since the Patent Act of 1836 it has been recognized by the Supreme Court that the presence or absence of novelty and invention in a particular case presents a question of fact. *Turrill v. M. S. & N. I. R. R. Co.* (1864), 1 Wall. 491, 68 U. S. 668; *Keyes v. Grant* (1886), 118 U. S. 25, 30 L. Ed. 54; *Royer v. Schultz Belting Co.* (1890), 135 U. S. 319, 34 L. Ed. 214; *Thomson Spot Welder Co. v. Ford Motor Co.* (1924), 265 U. S. 445, 68 L. Ed. 1098. This Court has uniformly followed this fundamental rule. *McRoskey v. Braun Mattress Co.* (9 Cir., 1939), 107 F. 2d 143; *Page v. Meyers* (9 Cir., 1946), 155 F. 2d 57; *Refrigeration Engineering, Inc. v. York Corporation* (9 Cir., 1948),

168 F. 2d 896; *Faulkner v. Gibbs* (9 Cir., 1948), 170 F. 2d 34. As late as February 28, 1949, the Supreme Court in *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 336 U. S. 271, 93 L. Ed. 672, expressly reaffirmed the rule, as immediately recognized by the Court of Appeals for the Seventh Circuit in *Hazeltine Research, Inc. v. Admiral Corp.* (7 Cir., 1950) F. 2d, 86 USPQ 289.

Since, therefore, the question of novelty or anticipation and the question of invention are questions of fact, the treatment of findings thereon is set forth in Rule 52(a) of the Federal Rules of Civil Procedure, which provides that such findings shall be binding upon an appellate court unless clearly erroneous. This was expressly recognized in the *Graver Tank & Mfg. Co. Case, supra*, the Supreme Court there holding that the findings of the lower court on invention were findings of fact, were supported by substantial evidence, and were therefore not clearly erroneous. Similarly, this Court, where substantial evidence is present to support findings on the question of novelty and invention, has always sustained such findings. *Ralph N. Brodie Co. v. Hydraulic Press Mfg. Co.* (9 Cir., 1945), 151 F. 2d 91; *Maulsby v. Consevoy* (9 Cir., 1947), 161 F. 2d 165; *Cutter Laboratories, Inc. v. Lyophile-Cryochem Corporation, et al.* (9 Cir. 1949), 179 F. 2d 80.

It is therefore incumbent upon appellant to do more than merely urge that evidence exists in this case which might lead a trier of fact to the conclusion that novelty and invention are present in his patent. To induce this Court to overturn Judge McCormick's findings of fact, appellant must demonstrate that there exists no evidence in the record which might have led Judge McCormick to

his conclusion that the patent is anticipated and lacks invention. This, appellee submits, appellant has not even purported to do. Moreover, it will be shown hereinafter that not only substantial evidence but overwhelming evidence is present in the record in the instant case to show that appellant's patent lacks both novelty and invention.

2. The Finding of the Court Below That the Leishman Patent Is Anticipated by Marschalk Patent No. 2,072,897 and by Schaefer Patent No. 1,906,106, and by Cunningham Patent No. 1,930,192, Is Supported by Substantial Evidence Proving Such Anticipation and Is Therefore Not Clearly Erroneous.

Judge McCormick expressly found that every element, feature and mode of operation of the tuner of the Leishman patent are anticipated in the light of the teachings of the Marschalk Patent No. 2,072,897 and the Schaefer Patent No. 1,906,106 [Finding of Fact No. 8, R. 52]. He found that the coaxial characteristic of the patented tuner is anticipated by the said Schaefer patent, and that the function and mode of operation of the Schaefer patent is identical with that of the patented tuner [Finding of Fact No. 9, R. 52]. He further found that Cunningham Patent No. 1,930,192 is in the same art as is the patent in suit, that such patent will perform the same result in the same way as does the patent in suit, and that such patent anticipates the patent in suit [Findings of Fact Nos. 13, 14 and 15, R. 53, 54].

These findings are findings of fact and appellee submits that not only does substantial evidence exist in the record supporting the findings but that the evidence proves conclusively such anticipation.

- (a) **The Marschalk Patent Discloses the Appellant's General Combination of a Lever Adjustably Mounting a Tappet Which Is Movable by the Lever Into Contact With a Rocker Attached to a Shaft to Be Positioned.**

As hereinbefore explained, the patent in suit consists essentially in a lever adjustably mounting two tappets which are movable by the lever into contact with the rockers of two shafts to be positioned by a movement of the lever. Considering only the lever, the tappet and the rocker adapted to position the radio tuning shaft in appellant's device, which combination is the subject of appellant's reissue claims in suit, the evidence consisting of the Marschalk patent [Deft. Ex. E-1, R. 822] proves the general combination to be old.

The Marschalk patent taught a device for automatically tuning a radio receiver at selected intervals of time to different broadcasting stations. It disclosed the same combination of a pivoted lever adjustably mounting a tappet intended to be brought in contact with a rocker connected to a shaft of a variable condenser, as is disclosed in the reissue patent in suit. The levers of this patent are intended to be automatically operated by electric control means including solenoids, so that the radio receiver can be controlled automatically by the time controlled device. The mechanism for rotating the condenser shaft and thus tuning the receiver, however, is the same as that of the Leishman reissue patent in suit. It consists of a lever 37 adjustably mounting a tappet 44 which is movable by the lever into contact with a rocker 34 attached to the shaft to be positioned.

Appellant's principal argument with respect to the Marschalk patent, however, is that the axis of the tappet of Marschalk is not aligned with the axis of the rocker

of Marschalk, whereas such alignment, that is, coaxiality between the tappet axis and rocker axis, is present in his patent. As will be shown hereinafter, such alignment or concentricity for the purpose of balancing forces was not necessary in the particular Marschalk structure, is but a common mechanical expedient, and is not invention. Moreover, the evidence in this case proves that such alignment or coaxiality was old prior to appellant's alleged invention.

(b) The Schaefer Patent Discloses Coaxiality in a Radio Tuner, the Function and Mode of Operation of Which Is Identical With That of the Patent in Suit.

The Schaefer patent No. 1,906,106 [Pltf. Ex. 18, R. 789] was prior to the Marschalk patent and discloses a radio tuner comprising essentially the same elements as shown in the Marschalk patent and in the patent in suit, having, however, a rack and pinion multiplier instead of a rocker. The Schaefer patent was incorporated in radio tuners manufactured by Zenith [Deft. Ex. H, R. 327] during the late 1920's. It was later incorporated into radio tuners manufactured by appellee [Pltf. Ex. 3, R. 339] and sold during 1939 and 1940, being provided, however, with plungers instead of levers [R. 147, 336, 337 and 363].

As shown by Figure 4 of the drawings in the Schaefer patent, the mechanism of the Schaefer patent includes the lever 51 pivoted at 21. A cam or tappet 56 is pivoted to an extension of the lever 51. There is provided a second lever 61 pivoted to the lever 51, which second lever is for the purpose of locking the tappet in a selected position, and this second lever is held in position by a set screw 65. A spring 49 normally holds the lever assembly in an upper position. The shaft of the radio set

to be tuned is connected with the shaft 9 which is provided with a pinion 24 meshing with two racks providing the spaced arms 32 and 34.

In the operation of the mechanism of the Schaefer patent, when the operator presses the lever 61 downwardly, as by the pressure of a finger on the set screw 65, the tappet 56 engages the two spaced arms 32 and 34, turning the rack and pinion to a predetermined position thereby to position the shaft 9 to the particular setting necessary to bring in a predetermined radio broadcasting station.

It will be noted that in the Schaefer device the arms numbered 32 and 34 of the rack and pinion move symmetrically about a line or axis. This axis or symmetrical point is located midway between the arms 32 and 34, and horizontally at a point aligned with the arms 32 and 34 when the said arms are moved to a common level. Schaefer designed his apparatus so that the axis 55 of his tappet 56 would coincide with this axis or point of symmetry of the rack and pinion when the tappet 56 is brought into engagement with the arms 32 and 34, thus incorporating into his tuner coaxiality.

With respect to the Schaefer patent appellant contends, first, that in providing coaxiality in a tuner having a rocker rather than a rack and pinion system, appellant was able to provide a device having fewer parts than did Schaefer and that such deletion of parts is evidence of invention. Secondly, appellant contends that the Schaefer patent does not in fact disclose coaxiality.

As to appellant's first contention two things are immediately apparent. Judge McCormick, faced with the same argument below, recognized that it was Marschalk, not appellant, who in fact was responsible for any deletion

of parts claimed by appellant. The Schaefer tuner includes a lever, a tappet pivotally mounted thereon, and a rack and pinion system engaged by the said tappet. When Marschalk substituted for the rack and pinion of Schaefer the rocker of Marschalk, the deletion of parts of which appellant speaks was compelled, a rocker inherently including less parts than a rack and pinion system. Furthermore, appellant's contention that a deletion of parts may provide evidence of invention and his citation of authorities that under particular factual situations differing from the situation here such deletion of parts might constitute invention, provides no basis for upsetting Judge McCormick's finding of fact that the patent in suit is anticipated by the Marschalk and Schaefer patents. Such finding of fact is obviously supported by substantial evidence.

According to appellant's own argument, the only problem which his alleged invention of coaxiality solves is that of creeping during resetting in the Marschalk device; yet such problem had already been admittedly solved in Schaefer [R. 146], and the Zenith tuner was admitted by the patentee to pass the test for coaxiality which the patentee himself had prescribed for the industry [Pltf. Ex. 2, R. 698, R. 309 to 315]. That the Marschalk patent, which followed the Schaefer patent and Zenith tuner, did not include this coaxiality is easily understood in view of the fact that in the Marschalk patent the levers of the tuner were intended to be automatically operated by electric control means including solenoids for control by timing devices, whereas the Schaefer patent and Zenith tuner were for hand operated radio sets, subject, ordinarily, to more frequent resetting. Indeed, appellant was hard put at the trial below and before Judge Harrison to demonstrate a setting difficulty in

Marschalk. To do this appellant constructed a special model, Defendant's Exhibit E, which purported to resemble the Marschalk patent disclosure, but which was neither solenoid operated, as shown in the patent, nor included load factors, such as condensers and the like, shown in the patent. With this model appellant argued that at extreme tuning angles of the Marschalk rocker the fact that the pivot 46 was not aligned with the rocker axis 33 introduced a tendency for said rocket to slip from tuned position during setting [R. 130-134]. As to this demonstration, Judge Harrison in the *Associated Case*, *supra*, had this to say:

"The court has tried the instrument and the witness' testimony does not add anything to what the court has already ascertained from an examination and an effort on its part to work the mechanical device. I had no difficulty in setting the device at the extreme end, but it is true that a person has to use a greater amount of care. That was the result of the court's own experiment with the instrument." [R. 320-322.]

Appellant's second contention with respect to the Schaefer patent disclosure, whereby he states that such patent does not in fact disclose coaxiality, is erroneous. As stated hereinbefore, in the Schaefer patent an axis or symmetrical point is located midway between the arms 32 and 34 of the tuner and horizontally at a point aligned with said arms 32 and 34 when the arms are moved to a common level. The apparatus is so designed that the axis 55 of the tappet 56 coincides, that is, is aligned with this axis, when the tappet 56 is brought into engagement with said arms 32 and 34. In his direct examination, appellant testified that in order to achieve coaxiality, he specially shaped his tappet [R. 153, 154,

274, 275]. Schaefer specially shaped his tappet for the same reason, interspacing the arms 32 and 34 and rounding his tappet 56 so that it could pass between the arms 32 and 34 for the necessary distance to secure alignment between the axis of the tappet 56 and the axis or symmetrical point of the arms 32 and 34. As pointed out hereinbefore, by this relationship, Schaefer admittedly avoided any setting difficulty in his patented tuner, and the Zenith tuner was admitted to pass appellant's test for coaxiality.

Thus, the proofs in this case not only provide substantial evidence for Judge McCormick's findings that the Marschalk and Schaefer patents anticipate appellant's alleged invention, but show conclusively that it was Marschalk, rather than appellant, who substituted a rocker for the rack and pinion of the Schaefer structure to delete parts therefrom, and that it was Schaefer who originally conceived and disclosed the radio tuner coaxiality which appellant claims as his invention.

(c) The Cunningham Patent Discloses Appellant's Lever-Tappet-Rocker Combination, Wherein the Axes of Tappet and Rocker Are Coaxial.

Not only, as found by Judge McCormick, is the Leishman patent anticipated by Marschalk and Schaefer, but, as likewise found by Judge McCormick, the actual incorporation of coaxiality itself in a lever-tappet-rocker combination preceded appellant in the disclosure of the Cunningham patent No. 1,930,192 [Pltf. Ex. 10, R. 741]. The full teaching of this patent shows a gas register in which a shaft, set by an automatic shaft setting device, controls a marking pen and an electrical switch which by electrical means automatically controls the combustion in the device, the shaft also operating an electrical means

for transmitting the reading of the register to a distant station.

We are not here interested in the general purposes of the entire Cunningham structure, but are interested only in that feature of the device which consists in the means for automatically setting the shaft. Such means is shown in Figure 9 of the patent. Figure 9 discloses a lever 50 adjustably mounting a tappet 55, which is movable by the lever into contact with a rocker 57 attached to the shaft 58 to be positioned. As with the device of the patent in suit, and as with appellee's accused devices, the axis of the rocker 57 is coaxial with the axis of the tappet 55 when the tappet and rocker are in contact.

At the trial appellant introduced a model [Pltf. Ex. 11, R. 461]. Such model was constructed in accordance with said Figure 9, there being removed from the model, however, a hammer consisting of the shaft 44 and a bolt 43. and there being connected to the shaft 58 for illustrative purposes a radio tuning condenser [R. 452, 453]. Appellee's witness, Dr. Mackeown, described the model as having a lever, a tappet and a rocker, the said rocker carrying the shaft to be positioned [R. 452]. It will be seen that a second braking or locking lever (51 in Figure 9 of the patent) is pivoted to the tappet bearing lever, such lever duplicating the locking lever 66 of the patent in suit. Dr. Mackeown testified that this model, which contains all of the elements claimed by appellant in his patent, was capable of turning the shaft 58 and thus the attached condenser to any desired angle to bring in any radio station, just as the device of appellant. Dr. Mackeown testified:

"To set this device in the beginning the lever containing the tappet can be moved down to bring the tappet into engagement with the rocker. The con-

denser then can be positioned manually to any desired position. The brake then can be applied and then if that condenser is turned to any other position and the tappet is moved downwardly with the brake applied, the condenser will be brought back to that predetermined position.” [R. 453.]

Dr. Mackeown further testified that in Cunningham

“* * * The axis of the rocker is coaxial with the axis of the tappet and there is a balance of all movements and there is no tendency at all for the lever to move as the rocker is rotated.” [R. 454.]

Again Dr. Mackeown referred to a letter to the trade written by appellant [Pltf. Ex. 2, R. 698] describing appellant's test for coaxiality, applied that test to the model Exhibit 11, and showed that according to that test the Cunningham structure showed coaxiality [R. 454, 455].

Again, Dr. Mackeown testified that he saw the demonstration which appellant made in his direct testimony using the Marschalk model [Deft. Ex. E] for the purpose of showing its alleged setting difficulty, and Dr. Mackeown applied that precise demonstration to the model Plaintiff's Exhibit 11. There was no tendency for the rocker to move or detune the condenser and Dr. Mackeown testified that the reason for this was because there was no unbalance of moments about the shaft bearing the rocker for the reason that the tappet and rocker in the model are coaxial [R. 455, 457].

It is therefore apparent that the model Plaintiff's Exhibit 11, which represents Figure 9 of the Cunningham patent and which contains all the elements claimed by appellant for his invention in his reissue patent, in-

cluding rocker-tappet coaxiality, is capable of attaining the same result as appellant claims for his device and is capable of attaining that result in precisely the same way.

In view of this testimony, therefore, substantial evidence supports Judge McCormick's finding that the Cunningham patent anticipates the patent in suit. Appellant urges, however, that this finding is erroneous for the reason that the Cunningham structure is from an art not analogous to that of the patent in suit; that substantial alterations of the Cunningham disclosure were made in producing the model demonstrated at the trial; and that the problems in the Cunningham structure are different from the problems in the patented structure.

Appellant ignores the essence of his own claim to invention in urging that the Cunningham patent is from a non-analogous art. Admittedly, his sole claim to invention lies in incorporating coaxiality in a rocker-tappet system for shaft positioning, the general combination of lever, tappet and rocket being old as disclosed by the Marschalk patent. The fact that coaxiality in appellant's particular shaft positioning means may or may not find usefulness in radio tuners, and the fact that coaxiality in the same shaft positioning means disclosed in Cunningham may or may not find usefulness in a gas register, does not disqualify the Cunningham patent as a pertinent reference against the patent in suit. Appellant's patent is not limited to the radio tuner art. Its title is "Means and Method of Turning Rotatable Objects to Predetermined Positions." The appellant's patent states that it

"* * * relates to improvements in automatic apparatus for turning rotatable objects about their axes to predetermined positions * * *." (P. 1, col. 1, lines 3-6.)

Among the many purposes set forth in the patent, it is stated that

“The purposes of this invention are to provide simple apparatus for turning dials, shafts and the like to the particular settings required in using an instrument or machine for a definite task; to afford means whereby a plurality of such rotatable elements may be simultaneously turned each to a pre-selected position which may be different from that to which any other such element is being turned; to provide a simple manually operated control for accurately returning such rotatable elements to any desired previous position; to provide mechanism whereby a single manual operation will cause a plurality of rotatable members each to be turned to any one of a group of pre-selected positions; * * *.” (P. 1, col. 1, lines 11-25.)

Thus appellant's patent is for a shaft positioning device and the same shaft positioning device is found in the Cunningham disclosure. Judge McCormick found that

“The Cunningham patent is in the same art of automatic shaft positioning devices as is the patent in suit.” [Finding of Fact No. 14, R. 53.]

The correctness of such finding is manifest. *In re Weingartner* (C. C. P. A., 1932), 58 F. 2d 442; *In re Kylstra* (C. C. P. A., 1937), 87 F. 2d 487; *In re Smyth* (C. C. P. A., 1941), 120 F. 2d 348; *Crown Cork & Seal Co. v. Sterling Cork & Seal Co.* (D. C., N. D., Ohio, W. D., 1913), 210 Fed. 26.

Appellant's second contention that the model, Plaintiff's Exhibit 11, represents substantial alterations from the Cunningham disclosure again ignores the substance of that which appellant purports to have contributed. The

only omissions in the model, Plaintiff's Exhibit 11, from the structure shown in Figure 9 of the Cunningham patent are the shaft 44 and bolt 43, which elements, as is obvious, have no function in the operations described by Dr. Mackeown and neither add to nor detract from the operation of the model in positioning a shaft to tune a condenser.

Lastly, appellant contends that no setting problem is present in the overall Cunningham structure which necessitates the use of coaxiality. From this he urges in effect that he has discovered a new advantage in coaxiality for radio tuners and has thereby made an invention. As will be shown hereinafter, appellant in fact discovered no new advantage of coaxiality, but merely is attempting to repatent its age-old function of balancing moment arms. However, even if appellant had discovered a new advantage in coaxiality, such would not be patentable.

In *General Electric Co. v. Jewel Incandescent Lamp Co., et al.*, 326 U. S. 242, 90 L. Ed. 43, the Supreme Court of the United States most recently had occasion to consider the problem of the anticipatory effect of prior art structures or articles which are removed from their settings and incorporated into different structures wherein utilization is made of the fact that the prior art structure will perform for a different purpose than originally intended. The case involved electric lamp bulbs having frosted interior surfaces. It had been found that such bulbs had, before the patentee, the disadvantage of a considerably reduced strength under that of the unfrosted bulbs. The patentee claimed as his invention the rounding of the sharp angular crevices of the frosting on the inside of the bulb which, it was proven, greatly increased the strength of the bulb.

Prior to the patentee's invention, it had been the practice to smooth off etchings for screens, outside frosted bulbs and the like for the purpose of improving light diffusion and transmission characteristics and for nothing else. The Supreme Court held the patent invalid as anticipated, quoting language from *Ansonia Brass & Copper Co. v. Electrical Supply Co.*, 144 U. S. 11, 36 L. Ed. 327, that

“* * * ‘the application of an old process to a new and analogous purpose does not involve invention, even if the new result had not before been contemplated.’ ”

However, the patentee argued that here was not a case where the patentee merely observed the advantageous properties of an old article of manufacture. He urged that he had created a new article of manufacture, an inside-frosted bulb having an etched inner surface characterized by round rather than sharp crevices—an article that had never existed before. He further urged that before himself no one knew why inside frosted bulbs were weak nor knew how to remedy the weakness, and the court agreed that the prior art appeared to have made no such disclosure. However, the Supreme Court in its opinion said that whereas it was old to frost the inside of an electric bulb and whereas it was old to produce a smooth surface on etched glass, the smoothing of the inside surface of the inside-frosted bulb could not be invention even though no one prior to the patentee had smoothed frosted glass for the purpose of improving the strength in the glass. The Court stated at page 47:

“* * * in the present case, the prior art discloses the method of making an article having the characteristics of the patented product, though all the

advantageous properties of the product had not been fully appreciated. *Lovell Mfg. Co. v. Cary*, 147 U. S. 623, 37 L. ed. 307, 13 S. Ct. 472. Pipkin found latent qualities in an old discovery and adapted it to a useful end. But that did not advance the frontiers of science in this narrow field so as to satisfy the exacting standards of our patent system. Where there has been use of an article or where the method of its manufacture is known, more than a new advantage of the product must be discovered in order to claim invention. See *De Forest Radio Co. v. General Electric Co.*, 283 U. S. 664, 682, 75 L. ed. 1339, 1347, 51 S. Ct. 563. It is not invention to perceive that the product which others had discovered had qualities they failed to detect. See *Corona Cord Tire Co. v. Dovan Chemical Corp.*, 276 U. S. 358, 369, 72 L. ed. 610, 614, 48 S. Ct. 380.”

In the instant case there is present, therefore, a patent expressly found by the court below to be of an analogous art. Such patent discloses exactly the combination claimed by appellant to be his invention. A model constructed in accordance with such disclosure is shown by the evidence to be capable of performing the precise operation of the patent in suit. Whether or not such operation was intended in the gas register environment of the Cunningham patent is immaterial, as is any added advantage appellant may purport to have perceived in using the structure for radio tuning. Judge McCormick’s finding of anticipation of the patent in suit by the Cunningham patent is manifestly supported by substantial evidence and is correct.

3. **The Finding of the Court Below That the Leishman Patent Is Lacking in Invention Is Supported by Substantial Evidence, Is in Agreement With the Prior Decisions and Should Therefore Not Be Disturbed.**

The major portion of appellant's brief respecting the validity of the patent in suit is devoted to the proposition that evidence exists in the record from which it might be inferred that invention is present. In arguing this proposition, appellant refers repeatedly to this Court's decision in *Pointer, d. b. a. Pointer-Williamette Co. v. Six Wheel Corporation* (9 Cir., 1949), 177 F. 2d 153, and urges that the evidence here provides those indicia of invention recognized there. Further, appellant attacks the decision of the Court of Appeals for the Tenth Circuit in *Richards & Conover Co. v. Leishman*, 172 F. 2d 365, and refers to affidavits of "leading authorities" which appellant contends demonstrate the incorrectness of that decision.

Judge McCormick below found as a fact that the patent in suit lacked invention [Finding of Fact No. 15, R. 54]. Appellee has shown hereinbefore that under fundamental principles of appellate review, a mere existence of evidence from which invention might be inferred is not competent to upset an express finding of fact of non-invention where substantial evidence supports such finding. Not only does substantial evidence support the finding of Judge McCormick, but such evidence conclusively proves that none of the indicia of invention recognized in the *Six Wheel Case, supra*, is present here, and that appellant's alleged contribution of coaxiality is but a simple mechanical expedient representing proper machine design. Furthermore, the Court of Appeals

for the Tenth Circuit was correct as was Judge Harrison in *Leishman v. Associated Wholesale Electric Co.*, 36 F. Supp. 804, and this Court under well-known principles of comity and uniformity of justice should follow that decision.

- (a) The Indicia of Invention Present in *Pointer, d. b. a. Pointer-Williamette Co. v. Six Wheel Corporation*, 177 F. 2d 153, Are Lacking in the Instant Case. Missing Here Is Any Long-Felt Want, Any Period of Unsuccessful Effort on the Part of Others, and Any Superseding Whatsoever by the Leishman Tuner of What Had Gone Before.

In the *Six Wheel Case*, this Court affirmed a holding below that invention in Knox Patent No. 1,926,727 was present. The Court first recognized that the findings of the trial court must be sustained unless clearly erroneous. Thereupon the court reviewed the evidence and found that it satisfied certain indicia of invention previously set forth by Judge Hand of the Second Circuit. These indicia of invention may be summarized and, so summarized, consist in the presence of a long-felt want for the particular invention, in a record of unsuccessful efforts by those preceding the inventor, and in the superseding by the inventor's product of what went before. The evidence in this case shows no long-felt want, no record of unsuccessful efforts by others preceding appellant, and no superseding by appellant's tuner of that which had gone before, indeed no use whatsoever of appellant's tuner.

In attempting to demonstrate a long-felt want for his alleged invention, appellant points to what purport to be earlier unsuccessful efforts in the field. He urges that these unsuccessful efforts are shown in Soffietti Patent

No. 2,388,581 [Deft. Ex. J, R. 838], Lane and Mackey application Serial No. 177,163 [Deft. Ex. K-1, R. 842], in the Marschalk and Schaefer patents, previously considered, and in the General Motors tuner [Pltf. Ex. 3, R. 339]. In evaluating the merits of appellant's contentions, these tuners should be considered in the light of appellant's own testimony as regards what his invention was.

After introducing and explaining various early tuners, clocks, and the like [R. 120-129], appellant described the Marschalk patent and introduced the model [Deft. Ex. E] allegedly representative thereof [R. 129-134]. The Marschalk patent, it will be recalled, discloses the general combination of lever, tappet and rocker shown in the patent in suit. The model, Defendant's Exhibit E, varies from the disclosure of the Marschalk patent in that the tuner of the patent was not intended for hand operation and had many load factors not present in the model. Appellant demonstrated from the said model the alleged setting difficulty present in Marschalk. This setting difficulty, appellant argued, posed the problem which he solved, and it is his solution [R. 153] which is alleged to constitute his invention. Appellant at the time of making his alleged invention and, indeed, until October, 1937, some three years subsequent to the filing in 1934 of his parent case [Deft. Ex. O, R. 843] from which his original patent No. 2,108,538 [Deft. Ex. P, R. 1001] reissued as the patent in suit, was divided, had not even seen the Marschalk patent [R. 288, 289]. Yet appellant testified:

"Q. (By Mr. Flam): I believe you demonstrated this Exhibit E to the court and explained how difficult it was to adjust the tappet in accordance with the position of the rocker,

Now, what is your solution, if any, to that difficulty?

A. Why, I figured that the difficulty could be overcome by making it—by making the axis of the tappet and the axis of the rocker coincide—that is to make the one axis coaxial with the axis of the other.

Q. Did you have any difficulty in doing that?

A. Why, I have a model that will show what was done. Of course it can be seen by the Marschalk device and by the rockers in the Soffietti and Lane & Mackey exhibits that the one tappet engages the surface of the rocker and, of course, two bodies can't occupy the same position at the same time, so in order to get the axis of one coaxial with the other I made an open rocker. I have an open rocker here and I prepared a little support to rest it on and that will show what I did.

I made an opening in the rocker in order to achieve this coaxiality and then I shaped the tappet so that when it is brought into an engagement with the rocker it has such a shape that the axis can sit down in the rocker. In other words I cut away the sides of the tappet to make it possible for the axis to set down inside of the axis of the rocker so that the two axes could become coaxial. And it will be noticed on this device that that kind of difficulty doesn't occur. You can press down there as hard as you want and you don't have any of that trouble occurring.

Now, here is a non-coaxial arrangement and you press that down and it immediately flips around the same as the Marschalk device, but this coaxial arrangement solved the difficulty. You see you have no difficulty at all." [R. 153-154.]

That then is appellant's claim to invention. It consists in the taking of the after-discovered Marschalk structure, modifying the same for hand operation, increasing its tendency to slip by decreasing the load on the tuner as hereinbefore pointed out, and in aligning the axis of the rocker with the axis of the tappet. Appellant's alleged invention does not even purport to be broad and basic to the problem of devising the first radio tuner. It is merely concerned with alleviation of an alleged and unproven minor setting difficulty in a structure which appellant did not even know of at the time he designed his tuner. Appellant originally thought himself to have been the discoverer of the basic lever-tappet-rocker combination. His incorporation of coaxiality in the tuner of the patent was a normal mechanical expedient and, as will be shown hereinafter, was not even claimed as an invention until appellant reissued his original patent.

Reduced to its proper setting, therefore, appellant's alleged invention, the problem which it purported to solve, and the solution which appellant purports to have come upon, bear no relation whatsoever to the alleged unsuccessful efforts of those preceding appellant. The problem which appellant purports to have solved is non-existent in the absence of a pivoted tappet, for it is in the positioning of such a tappet that the problem arises. The Soffietti patent evidences neither a long-felt want for appellant's alleged invention nor any unsuccessful effort in supplying that long-felt want. Such patent is totally immaterial in that it uses no pivoted tappet but rather two tappets varied by means of threads. The tuner of the Lane and Mackey application has a tappet that likewise is never free to turn and could therefore never exhibit the alleged difficulty present in Marschalk. The tuner of the Schaefer patent, as hereinbefore pointed

out, represented no unsuccessful approach to the problem allegedly solved by appellant, but rather anticipated appellant's patent by disclosing coaxiality. It was sold in the form of the Zenith tuner [Deft. Ex. H]. The General Motors tuner [Pltf. Ex. 3], as hereinbefore shown, likewise incorporated the Zenith structure, omitting, however, the levers thereof. Half a million of these tuners were sold in 1939 and 1940 [R. 336, 337]. Finally, of course, the Marschalk tuner was not designed for hand operation and frequent resetting. It was designed for solenoid operation in response to timed control devices.

Thus, none of the alleged evidence urged by appellant to constitute evidence of a long-felt want and of unsuccessful efforts of those preceding him sustains his position. The Soffietti and Lane and Mackey tuners bear no relation to his purported problem. In the Schaefer and General Motors tuners, the purported problem was already solved. In Marschalk, the problem could only exist by synthesizing the artificial structure, Defendant's Exhibit E.

The argument of appellant might be taken to mean, however, that he conceives himself to be the man responsible for the only practicable automatic radio tuner. This again is erroneous in view of the existence of the Zenith tuner which came upon the market and was sold for two years during 1929 and 1930, which was patented as the Schaefer patent, and which later reappeared in the form of a General Motors push button automatic automobile radio tuner of which approximately five hundred thousand were sold.

Moreover, as testified to by appellant's witness Schwarz, there was the Marvin type tuner of patent No. 1,707,754 [Ex. A to Defendant's Motion for Summary Judgment,

R. 108]. The Marvin tuner is of the so-called advancing nut type, of which many hundred thousands have been sold in the automobile industry by General Motors and others [R. 368-371]. Again there is the switch type tuner of the Chrysler line which has found considerable commercial usage, as testified to by plaintiff's witness Schwarz [R. 333]. It is not submitted by plaintiff that these tuners, all satisfactory, accurate, and easily settable, antedated the patent with the exception of the Zenith tuner and the Schaefer and Marvin patents, but it is clear that defendant's alleged invention was not basic and indispensable to the tuner industry, it being only applicable to the Marschalk or adjustable tappet-rocker-lever type.

Therefore, contrary to the assertions of appellant, the record establishes that rather than showing wide experimentation demonstrating a need for his asserted solution, the experimentation inferred from the evidence was not directed to the narrow problem allegedly posed by the Marschalk structure, which problem could not have been present prior to 1937, but rather, concerned entirely different type tuners. No evidence whatsoever establishes either that the art prior to appellant needed his alleged invention, that any problem existed requiring his alleged invention, or that anyone preceding appellant engaged in any unsuccessful attempts to reach the alleged invention.

But even assuming contrary to the record that a problem did exist when appellant entered the field, the evidence further shows that the structure devised by appellant was appallingly impractical, superseded no prior devices, and met with no commercial success whatsoever. This structure, as it appears in the reissue patent in suit, consists in an operating lever, freely adjustable tappets pivoted thereon, a locking lever for said tappets, and two

rotatable rockers engageable by the tappets to tune simultaneously a combination radio and television set. This Court may view a model of the patented structure prepared by appellee's witness Schwarz [Pltf. Ex. 5, R. 383]. Simple inspection of such model and of appellant's patent disclosure makes it evident that this so-called invention is indeed but a poor answer to the problem, if one existed, posed by Marschalk. Schwarz, operating the structure before the court as taught in the patent in suit, demonstrated that it was totally impractical and unworkable. He set the tappets as taught in the patent in suit, locked the tappets and then proceeded to see if pressing the lever would turn the rockers and thus the condensers to their initially set position in order to bring in the stations. Neither rocker returned to its proper position, and Schwarz explains that such failure was due to the high step-up in the structure and to its ineffective lock-up design, and that the mechanism would not be commercially satisfactory. Schwarz further testified that in order to attempt to make the patented structure workable, either a larger diameter locking hub would have to be used than was shown in the patent, resulting in limiting the angular movement in the tuner, or a long lever would have to be used, resulting in an extremely large tuner. He also testified that the situation might be improved by increasing the brake coefficient of friction, but he was not sure what kind of result would be gained by this. In view of Schwarz' previous testimony that the total angular movement in the two rockers of the reissue patent in suit was 25 degrees and 38 degrees, respectively, and that this was not near optimum in efficiency, further decrease of the permissible turning angle in the model as would be required by an increase in the lock size would even more reduce the efficiency of the

device [R. 376-381]. The tuner, therefore, is inherently impractical.

It thus appears that the actual structure devised by appellant is commercially unusable. That such is the fact is amply demonstrated by the record of its so-called impact upon the industry. The record of the impact of appellant's alleged invention upon the industry is that never was such a tuner built or sold commercially, even by appellant's licensee. Appellant's own testimony shows, first, that no commercial device was ever built showing the double tappet-rocker system for simultaneously tuning radio and television sets and, second, that no commercial device was ever built including his lever operated tuner with or without his television tuning means [R. 279, 280].

Each and every tuner referred to by appellant as establishing the superseding by his invention of that which had gone before is admittedly a leverless, push button tuner of the type expressly held not to be covered by the patent in suit by this Court in *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722, and in *Leishman v. Radio Condenser Co., et al.*, 167 F. 2d 890. None of such tuners descends from appellant's alleged invention, but, on the contrary, the tuners are of the push button type, first placed upon the market by the Crosley Corporation in January, 1938, prior to the issuance of the reissue patent in suit or its original, patent No. 2,108,538 [Ex. 3 attached to complaint, R. 11, R. 217, 218].

In the Court below and in previous litigation, appellant urged that representatives of the Crosley Corporation had access to his disclosure of a coaxial tappet-rocker system when they designed the Crosley tuner, and that thus his

patent is responsible for all the subsequent tuners. This disclosure was supposed to have come about when appellant's patent No. 2,084,851 [Pltf. Ex. O, R. 843] issued, and its file wrapper containing the drawings in the patent in suit became publicly available. The contention was rejected by Judge Harrison in the original case of *Leishman v. Associated Wholesale Electric Co., supra*, and was rejected by Judge McCormick below, who expressly found, first, that the widespread acceptance of the afore-said push button tuners in the radio industry was not attributable to the disclosures of the patent in suit, and who, secondly, found that such widespread acceptance of push button tuners appears to be due to independent research and experiments by Crosley [Findings of Fact Nos. 11 and 12, R 53]. Appellant has apparently abandoned this contention but still bluntly states in his brief that "There is no evidence that anyone else came upon appellant's solution at about the same time, either before or after" (App. Op. Br. p. 82). This statement is untrue, as evidenced by the testimony before Judge Harrison in the *Associated Case, supra*, which testimony is present in this record by stipulation [R. 480-529], and which testimony supports the findings of Judge McCormick. It is, of course, also untrue in view of the Schaefer and Cunningham patents.

All the commercial success that can be urged for the patent in suit is that appellant licensed the Crowe Name-Plate and Manufacturing Company under his patent No. 2,084,851 [R. 277], that later Crowe included in the license agreement the original of the patent in suit, and that Crowe through Quality Hardware and Manufacturing Company manufactured and paid royalties to appellant on fifty thousand plunger type tuners until 1940 [R. 280, 281]. It should be carefully noted that this

minuscule portion of the tuner output in the industry consisted not of tuners representative of the disclosure of the patent in suit, but rather push button tuners not coming on the market until the summer of 1938 [R. 226], some months after the advent of the Crosley tuner and being substantially the same as was the Crosley tuner [R. 644, 645]. Since, therefore, none of the tuners upon which appellant relies for a showing of commercial success bears any identity with his patent, it is unnecessary herein to review the law with respect to the effect of commercial success on the issue of invention. The rule is well established that for commercial success to be material at all it must be by devices substantially identical to that shown and described in the patent in suit. It is not sufficient to point to the commercial success of independently developed different structures and contend that they include the invention of the patent in suit. *Cuno Engineering Corp. v. Automatic Devices Corp.*, 314 U. S. 84, 86 L. Ed. 58; *Schreyer v. Chicago Motocoil Corp.* (7 Cir., 1941), 118 F. 2d 852; *Johnson v. Lambert* (2 Cir., 1916), 234 Fed. 886; *Haggerty v. Rawlings Mfg. Co.* (8 Cir., 1926), 14 F. 2d 928.

The record, therefore, establishes that appellant has failed to show any long-felt need or want for his alleged invention, any series of unsuccessful experiments directed towards his alleged solution, and any superseding by his structure of that which has been used before. Appellant in failing to show a need for his invention merely shows an ingenious synthesizing of a problem in a patented structure which issued three years after appellant's own claimed invention. In failing to show any experimentation seeking to solve this problem, appellant merely establishes work of diverse nature directed towards the devising of tuners having nothing to do with the type of tuner to

which his alleged invention related; and in attempting to show commercial success for his alleged invention, appellant has merely shown that whereas none of his own tuners has ever been manufactured and sold, all commercial success in the field has gone to those push button type tuners originally designed by Crosley, which this Court has expressly excluded from the scope of appellant's patent.

(b) Long Prior to Appellant's Alleged Invention the Principle of Coaxiality Was Commonly Understood by Mechanics and Utilized as a Common Expedient for the Purpose of Avoiding Unbalanced Moment Arms in Machine Design.

It was upon this ground that Judge Harrison in *Leishman v. Associated Wholesale Electric Co.*, 36 F. Supp. 804, held the appellant's patent in suit invalid. The same arguments were presented to Judge Harrison and to this Court on appeal following his decision as are here presented by appellant, and Judge Harrison, as did Judge McCormick below, reached the conclusion that appellant's alleged coaxiality did not involve the exercise of the inventive faculty. Despite appellant's contention that the presumption of validity of his patent was restored when this Court found his patent not infringed in the *Associated Case* appeal, Judge Harrison's decision has not been overruled, this Court having expressly and with care refused to decide on validity at all, stating in its opinion (137 F. 2d 722, 727):

“Since the claims, if valid, are not infringed, the question of their validity need not be decided. The judgment declares that the claims are ‘invalid for want of invention.’ In the view we take, the declaration is unnecessary. As to its correctness or incorrectness, we express no opinion.”

Appellant urges in his brief that Judge Harrison misunderstood the nature of coaxiality and urges that this Court disagree with Judge Harrison. That Judge Harrison did not misunderstand the nature of coaxiality and that his decision was correct when written and is still correct is shown by the fact that the same conclusion was reached by the Court of Appeals for the Tenth Circuit in *Richards & Conover Company v. Leishman*, 172 F. 2d 365, and by Judge McCormick below. The record before Judge Harrison, and the record before the Court of Appeals for the Tenth Circuit are neither more favorable nor less favorable to appellant than is the record here. The differences, if any, are in presentation and in argument, and the three records compel the conclusion that appellant's so-called coaxiality is but a symmetrical lining up of axes in order to reduce undesirable moment arms, *i. e.*, the common mechanical expedient of concentricity.

As to this, appellant's own expert in the *Associated Case* testified, which testimony is set forth in Judge Harrison's opinion:

“Q. Whenever you have two members that you want to turn together in the same orbit or to maintain contact with each other as they are turning together, you know that they should be on-center, isn't that correct? A. Well, they may be coacting in such a way that the resultant would be a center.

Q. The resultant; either they are actually on-center or the resultant amounts to the same thing; isn't that correct? A. Yes; so they will function together.

Q. In other words, this matter of putting these members on-center is one of the common tools and one of the common experiences of a machine designer? A. Yes. If you have reference to machine elements in a machine; yes.' ” (Pp. 808-809.)

That this was a common mechanical expedient was appreciated by Judge Harrison, and it will be understood that in all the structures of the instant case, the incorporation of coaxiality merely means that the devices are balanced and that no moment arms exist which during setting are likely to push the rocker of appellant or Cunningham or the rack and pinion of Schaefer to a detuned position.

The witness Schwarz testified on this point that in the General Motors tuners the centers of the tappets are so arranged that they are symmetrical or concentric or identical with the centers of the rocker and that such is coaxiality [R. 340]. He further testified that the principle of coaxiality is understood by machine designers, that it is a mere application of a principle of engineering amounting to the elimination of all moment arms, and that such principle was known to engineers from the time of his schooling [R. 341]. Furthermore, he testified that the elimination of moments by making things line up concentrically or coaxially is a well-known and well-established principle of engineering [R. 341-342].

The witness Schwarz explained on his redirect examination just exactly what he meant by the principle of moment arm elimination in these coaxial tuners, and he stated:

“A. I will endeavor to do so. If the two centers are at a distance from each other the separating distance is considered the lever arm or a moment arm.

When one point of one circle hits the point of its mating circle and the centers are not together—in other words, there is a moment arm difference between centers, then there will be a fight between the two circles as to each one wanting to follow its own path because of the leverage which exists between those two points.

I don't know whether that makes it entirely clear. Let me see if I can elucidate. For example, if we were striking right through the center of a circle with an arm and hitting the exact center of that circle the circle would not be expected to turn because there would be no moment arm, but if we were striking with an arm any point out from that center we would have a moment arm by the distance out from that center and the circle would then move such as a crank and the crank would be the moment arm.

Q. Now, what is the relation between this matter of moments which you have just described and the principle of concentricity or symmetry which you referred to on your direct examination?

* * * * *

Q. By Mr. Lyon: Mr. Schwarz, what does this engineering practice of eliminating moments, that technique, have to do with the fact that in this tuner having an adjustable tappet and a rocker with coaxiality there is no walking movement of the operating member as demonstrated to the court here?

A. This application of the old principle of moment arms and how they work and how they function would be in this case to prevent the tappet from jumping around, or, in other words, from moving when it came into relation with the rocker. And that, as I have tried to point out, is application of an old principle to produce a desired result, because without a moment

arm the two pieces would either not move, or if actuated would move together.

Q. If the moments were eliminated would their effect be as you have stated, if two members move that they move together, or if one moves the other will move with it?

A. I think one is the converse of the other. In other words, if we consider one a transmitting means, and the other a receiving means, if the one was actually in dynamic movement the other would be expected to move with it if they were concentric. But if the one was not in movement and the other came up against it, it would not be considered to move in any other plane or in any other circle, because of the elimination of moment arms. I think I can explain by a simple example, if I may be permitted to do so, to try to make my explanation a little clearer: If a toolmaker, as I said before, had to drill a hole or prick-punch a bar, he would put it in a 'V' block and would be sure to punch it in the dead center of that bar, otherwise the bar would move relative to the V block, and that would be the application of moment arms to movement, if he punched or drilled it in the dead center it would not be expected to move.

Q. Does a toolmaker practice that technique of eliminating moments in the ordinary course of practicing his profession?

A. Yes, he does, when he takes a bar and puts it in a drill press, or if he wants to prick-punch it to drill it he puts it in the V block and then hits or drills it in the dead center right through the center of the bar, and thereby introduces no upsetting moment arms causing no movement of the one relative to the other.

Q. To make the record clear, is it your testimony that this technique of eliminating moments in design-

ing machines or pieces of apparatus is what you referred to as principles of symmetry or concentricity, which you stated were known and expected of machine designers, to your knowledge, ever since you have been in school?

A. That is what I meant when I testified to the symmetry, concentricity and coaxiality, and the laws of it for relative movement or non-movement." [R. 438-441.]

Appellant in his opening brief attempts to make much mystery of the alleged setting difficulty which he synthesized from the Marschalk patent disclosure. As recognized by Judge Harrison, as recognized by the Court of Appeals for the Tenth Circuit, as recognized by Judge McCormick, and as demonstrated by the witness Schwarz, no such mystery exists. The setting difficulty in the model constructed by appellant [Deft. Ex. E] is but an example of unbalanced moment arms, and coaxiality is but a common expedient for avoiding such unbalanced moment arms. As the above testimony shows, the centers of the tappet and of the rocker are made concentric, so that there will not be a force directed on one side of the axis of the rocker when the freely pivoted tappet is brought into engagement therewith. The presence of such a force, *i. e.*, a moment arm, would tend to detune the rocker during setting. Absence of that force or moment arm would mean that the force was being directed through the center of the rocker and thus not tending to turn the same. Mr. Schwarz makes this perfectly clear in his analogy respecting prick-punching a bar. As with appellant's structure, as with the prior Schaefer structure, and as with the prior Cunningham structure, the tool maker directs his force precisely through the center of the piece, as hitting other-

wise the force would pass to one side of such center, operate as a moment arm and turn the piece. It is merely the application of a common principle. It is present in Schaefer as heretofore explained and as evident from the fact that Schaefer no more detunes during setting than does any other coaxial structure. It is present in Cunningham. It was understood by the Crosley designers when they independently devised the Crosley tuner from which all the present tappet-rocker tuners were developed. It is as simple as the common child's teetertotter which teeters because an unbalanced force is being applied to one side of its pivot point or center, and, as found by Judge McCormick, the application of this principle to radio tuning devices, were appellant the first to so do, would be nothing more than a new use *per se* [Finding of Fact No. 16, R. 54].

Appellant's principal argument used in the instant case, whereby he endeavors to show that he has invented, lies in his contention that he is the first to use coaxiality between two members to prevent them from rotating. The foregoing makes it obvious that appellant does not "prevent" rotation between rocker and tappet. He merely, by use of the principle of moment arm elimination, directs the force of the tappet directly through the center of his rocker, thereby, as in the case of the prick-punch operation, avoiding a moment arm which would tend during setting to cause his rocker to rotate or detune, or cause the bar of Mr. Schwarz' illustration to rotate within its "V" block support. Appellant's argument, expressed in the appendix to his brief, that the Court of Appeals for the Tenth Circuit, that an expert witness in the case in the Tenth Circuit, that Mr. Schwarz, and that appellee's counsel advanced incompatible theories explaining the foregoing

is unsound in the light of the foregoing analysis. However phrased and however illustrated, any explanation of this common phenomenon reduces to the simple proposition that coaxiality in the instant case, as it has always done before, merely balances out unwanted moment arms. Appellant produced for Judge McCormick no evidence that had not been before the Court of Appeals for the Tenth Circuit and before Judge Harrison, and Judge McCormick came to their same conclusion. Not only is Judge McCormick's finding of fact that the patent in suit is lacking in invention supported by substantial evidence in the record, but such finding is manifestly correct and properly in accord with the earlier decisions.

(c) This Court Should Follow the Decision of the Court of Appeals for the Tenth Circuit in *Richards & Conover Co. v. Leishman*, 172 F. 2d 365.

The Court of Appeals for the Tenth Circuit held the patent in suit invalid for want of invention in *Richards & Conover Co. v. Leishman*, 172 F. 2d 365. Following that decision and after rehearing, the Court reaffirmed its former decision and filed an opinion analyzing the problem synthesized by appellant from Marschalk and showing how obvious would be the application of coaxiality to the Marschalk structure in order to solve such problem. Appellant argues, however, that this analysis is in error and urges affidavits presented below on a motion to amend findings and for a new trial in support of his contentions.

Appellee submits, first, that such affidavits are not properly part of the record-in-chief on this appeal and thus should not be considered in a treatment of the merits of the appeal, and, second, that even if such affidavits were to be considered the affidavits do not traverse the correctness of the said analysis.

Affidavits such as these should not be considered on the merits of an appeal inasmuch as such affidavits are only pertinent to a consideration of the particular motion which they purport to support. The affiants were not present at the trial and appellee had no opportunity to cross-examine said affiants either with regard to their qualifications or with regard to that to which they made affidavit. *The Baltimore and Potomac Railroad Company v. Church Trustees* (1875), 91 U. S. 127, 23 L. Ed. 260; *Campbell et al. v. Rankin* (1879), 98 U. S. 261, 25 L. Ed. 435; *Stewart v. Wyoming Cattle Rancho Co.* (1888), 128 U. S. 383, 32 L. Ed. 439. Whereas such affidavits may be properly considered by this Court in considering the denial of appellant's motions for a new trial and to amend the findings, the disposition of such motions was within the discretion of the Court below and no abuse of such discretion is here shown. *United States v. Socony-Vacuum Oil Co.* (1940), 310 U. S. 150, 84 L. Ed. 1129; *Brown v. New York Life Ins. Co.* (9 Cir., 1945), 152 F. 2d 246; *Thiel v. Southern Pac. Co.* (9 Cir., 1945), 149 F. 2d 783.

Even if the affidavits were to be considered by this Court on the merits of this appeal, such affidavits do not detract from the soundness of the conclusion reached by the Court of Appeals for the Tenth Circuit. The substance of the analysis supporting the conclusion is set forth in the opinion at pages 371 and 372, wherein the Court states:

“Since the more the rocker is tilted the greater becomes the non-coaxiality between the axis of the rocker shafts and pin A and the greater becomes the tendency of the rocker to creep, and since, when the pin A approaches substantial coaxiality with the rocker shafts, creeping disappears, it is obvious that

the problem can be solved by effecting substantial coaxiality between pin A and the axis of the rocker shafts, when the tappet is in full engagement with the rocker.”

In view of the analysis and the proof by the drawings that when the rocker is tilted, unbalanced opposite lever arms exist which cause creeping, and that when substantial coaxiality is approached these unbalanced lever arms disappear, it is difficult to argue with the basic conclusion that invention is lacking in the instant patent. In view of the fact that the unbalanced lever arms to which the opinion refers are but unbalanced moment arms as shown by Schwarz, it is difficult to see how the conclusions of Schwarz can be controverted. The simple fact is that when the non-coaxial rocker and tappet are tilted, unbalanced moment arms exist which cause the resultant force applied by the tappet to be on one side of the rocker axis, and it is this force which causes creeping. The simple fact is that when substantial coaxiality is approached between rocker and tappet the unbalanced moment arms disappear, the force of the tappet is directed through the axis of the rocker, and creeping disappears.

Faced with this clear analysis of the Court of Appeals for the Tenth Circuit that a simple, well-known engineering principle was applied by appellant to the Marschalk device, appellant has attacked said analysis upon superficial and immaterial grounds, and by argument and through the affidavits hereinabove referred to has pointed to what he claims are inaccuracies in the drawings in the

opinion of the Court of Appeals for the Tenth Circuit. Appellant's argument and the substance of the affidavits constitute objections on two grounds: first, that the Court shows a structure in which the pin A and apex G are to one side of the line XY and appears to place reliance on this fact; and, second, that the distance of pin A from the edge of the tappet in Figure 2 is less than the distance of the pin A from the edge of the tappet in Figure 1. The first of these objections can be ignored, inasmuch as such objection is purely immaterial and has nothing to do with the correctness of the analysis or conclusion. Such analysis and conclusion do not require that the pin A or apex G be placed in any particular position with respect to the line XY. The second of the objections may likewise be ignored inasmuch as when the rocker is tilted as in Figure 1, the axis A and the axis D do indeed draw apart and the alleged error is thus no error at all, but merely exemplifies a diagrammatical approach to the problem.

It is fundamental law that in the absence of a showing of palpable error in the prior decision, a Court of Appeals will follow such decision where rendered by the Court of Appeals of another circuit. Comity and uniformity of justice require that this Court hold the patent in suit invalid for want of invention. *Beach v. Hobbs* (1 Cir., 1899), 92 F. 146; *Gormley & Jeffrey Tire Co. v. United States Agency, et al.* (2 Cir., 1910), 177 F. 691; *Cincinnati Butchers' Supply Co. v. Walker Bin Co.* (6 Cir., 1916), 230 F. 453; *Novadel-Agene Corporation v. Penn, et al.* (5 Cir., 1941), 119 F. 2d 764.

4. The Patent in Suit Is Invalid Since It Is for a Different Invention Than Was the Original Patent From Which It Was Reissued.

Judge McCormick withheld decision and made no findings respecting whether or not the claims in issue of the patent in suit could be sustained as being for the same invention as was appellant's original patent No. 2,108,538. The invalidity of such claims, however, on this ground is amply shown by the record in this case under the principles set forth by this Court in *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722, and *Leishman v. Radio Condenser et al.*, 167 F. 2d 890.

Reissue of appellant's original patent No. 2,108,538 could, of course, only be made under the provisions of the reissue statute, *R. S. 4916, Title 35, U. S. C. Section 64*, which provides in part:

"Whenever any patent is wholly or partly inoperative or invalid, by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, if the error has arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, the commissioner shall, on the surrender of such patent and the payment of the duty required by law, cause a patent for the same invention, and in accordance with the corrected specification, to be reissued to the patentee or to his assigns or legal representatives, for the unexpired part of the term of the original patent. * * *"

The basic requirement for a valid reissue patent under this statute is that the reissue patent must be “for the same invention.” This Court in the *Associated Case*, at page 723, stated:

“Thus a reissue patent must be for the same invention as the original patent. Otherwise it is invalid.” (Citing *U. S. Industrial Chemicals v. Carbide & Carbon Chemicals Corp.*, 315 U. S. 668, 675-681, 62 S. Ct. 839, 86 L. Ed. 1105.)

Courts have not hesitated to hold invalid reissue patents improvidently granted otherwise than for the same invention. *Parker & Whipple Co. v. Yale Clock Co.* (1887), 123 U. S. 87, 31 L. Ed. 100; *Lorraine, et al. v. Townsend et al.* (9 Cir., 1925), 8 F. 2d 673.

And the test for whether or not the reissue patent is for the same invention as was the original patent is whether or not that covered by the reissue patent was disclosed in the original and was intended to have been covered and secured by the original. The rule was set forth by this Court in the *Associated Case*, at page 723 of the opinion:

“An original patent and a reissue patent are not for the same invention unless what is covered by the reissue was disclosed in the original and was intended to have been covered and secured by the original.” (Citing again *U. S. Industrial Chemicals v. Carbide & Carbon Chemicals Corp.*, *supra.*)

This is the law in this Circuit and was the law prior to the *Associated Case*, it being stated in *Lorraine et al. v. Townsend et al.*, *supra*, at 675:

“In *Carpenter Straw Sewing Co. v. Searle* (C. C.) 52 F. 809, 814, Judge Coxe says: ‘Unless the court can find that the invention of the reissue is described as the invention in the original, and that the patentee *intended* to secure it as his invention in the original, the reissue is invalid; it is not for the same invention.’

“In *Corbin Cabinet Co. v. Eagle Lock Co.*, 150 U. S. 38, 42, 43, 14 S. Ct. 28, 30, 37 L. Ed. 989, the court says: ‘It is settled by the authorities that, to warrant new and broader claims in a reissue, such claims must not be merely suggested or indicated in the original specification, drawings, or models, but it must further appear from the original patent that they constitute parts or portions of the invention which were *intended* or sought to be covered or secured by such original patent.’” (Emphasis supplied.)

And in testing the reissue patent here in suit and the claims of said reissue patent here asserted by appellant, this Court further stated at page 723:

“* * * Hence the questions here to be considered are whether what is covered by claims 7-11 of the reissue patent was disclosed in the original patent, and whether it appears from the face of the original that what is covered by claims 7-11 of the reissue was intended to have been covered and secured by the original.”

It is submitted by appellant that under the above principles appellant's reissue patent is invalid; first, because appellant persists in asserting a scope for his patent expressly stated to be an invalid scope by this Court in *Leishman v. Associated Wholesale Electric Co., supra*, and in *Leishman v. Radio Condenser Co., et al., supra*; and, second, because nowhere did original patent No. 2,108,538 show any intent to cover and secure as invention the coaxiality which appellant now asserts to be his contribution to this art.

- (a) Since Appellant Persists in Asserting for His Patent a Scope Held to Be Invalid by This Court in *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722, and in *Leishman v. Radio Condenser Company, et al.*, 167 F. 2d 890, This Court Should Now Hold the Patent Invalid.

This Court in *Leishman v. Associated Wholesale Electric Co., supra*, held that plunger type tuners did not infringe the patent in suit, stating at page 727:

"These claims, it will be observed, are for combinations each of which includes a rocker. Whether the combinations include tappets and levers is not clear. If they do not include levers, the claims are not for the same invention as the original patent and hence are invalid. If they do include levers, the claims are not infringed, for the accused device contains no lever."

Thus through a limitation of appellant's claims compelled by the reissue statute, this Court preserved the validity thereof. Appellant, however, has been unwilling to abide by the limitation. He again asserted the claims to cover plunger type devices before this Court in *Leish-*

man v. Radio Condenser Co., et al., supra, wherein the earlier decision in the *Associated Case* was reaffirmed, the question of validity not being before this Court. He asserted the claims to cover plunger type tuners in *Richards & Conover Co. v. Leishman*, 172 F. 2d 365, and the claims were held there invalid. He again asserts the claims to cover plunger type tuners in this litigation, Judge McCormick having held them invalid. It would appear that the generosity of this Court in saving the patent in suit for appellant, plus appellant's determination to ignore the decision of this Court, has resulted in years of expensive added litigation. It is submitted that such litigation should be terminated and that this Court, accepting the claimed scope upon which appellant insists, should now hold the patent an invalid reissue. Such a holding would be consistent with prior practice by this Court. *Dallas Machine & Locomotive Works, Inc. v. Willamette-Hyster Company, et al.* (9 Cir., 1940), 112 F. 2d 623.

Appellant in his brief does not expressly attempt to justify the reissue patent in suit as a valid reissue for the same invention as was original patent No. 2,108,538. However, in arguing the question of infringement, appellant urges, first, that this Court was in error in the *Associated Case, supra*, and second, that new evidence exists establishing equivalency between levers and plungers, and that, therefore, an intent to cover and secure as his invention plunger type tuners is evident in the original patent.

It would be idle here to review those considerations which led to the decision of this Court in the *Associated Case*. The question of the allowable scope of appellant's claims was reargued in the *Radio Condenser Case*, and there this Court expressly reaffirmed its decision respect-

ing this patent. Nothing in *Graver Tank & Mfg. Co., Inc. v. Linde Air Products Co.*, U. S., 94 L. Ed. Adv. Op. 767, cited by appellant, changes the law in this Circuit respecting the doctrine of equivalents or the principles underlying such doctrine either as applied to an original patent or as applied to a reissue patent. Nothing in appellant's arguments, which are but reiteration of that which has previously been argued before this Court, furnishes grounds for a departure by this Court from the principle of its previous decisions.

Appellant argues here, as he did in the *Radio Condenser Case*, that new evidence exists establishing plungers and levers as equivalents and that, therefore, his original patent evidenced an intent to cover plunger type tuners. In the *Radio Condenser Case*, such evidence consisted in patents allegedly not before this Court, showing plungers in radio tuners, and in a showing of various devices illustrating plungers and levers. Here the asserted new evidence consists of texts purporting to prove that the portion 57 of the lever F of appellant's original patent is a plunger, and charts illustrative of appellant's testimony from the stand, which testimony purported to show that as a matter of fact levers and plungers are equivalents.

As to the contention of appellant, assertedly supported by new evidence, that a plunger is shown in the drawings of his original patent, it should first be pointed out that the decisions of this Court in the *Associated* and *Radio Condenser Cases* were based upon what the face of the original patent showed to have been intended to be secured and covered as the invention. Even were a plunger shown in the drawings of the original patent, such showing would provide no evidence of intent to cover and secure plungers as the invention in the originally claimed com-

bination. No reference whatsoever was made in the objects, description, or claims of the original patent to plungers of any kind. Even had the term "plungers" been written into the original claims, such claims would have been unsupported by the disclosure. *Permutit Co. v. Graver Corp.* (1931), 284 U. S. 52, 76 L. Ed. 163. Absent the element plungers in the original claims, reference to the bare drawings will not justify a reading of the term into the claims. *Dugan v. Lear, Inc.* (2 Cir., 1946), 156 F. 2d 29. Much less does reference to said drawings evidence any intent to cover and secure plungers as the invention of the original patent. Finally, the alleged plunger portion of the said drawings is not in fact a plunger, but was rather referred to as, and is, an extension 57, part of the lever F [Deft. Ex. A, p. 1, Col. 2, lines 34-35].

Appellant's charts illustrative of his testimony to the effect that plungers and levers perform the same function are, of course, not new evidence, but are merely additions to argument presented to this Court before. This Court decided in the *Associated Case*, and reaffirmed its decision in the *Radio Condenser Case*, that plungers and levers did not perform the same function in the same way. Appellant here, as in the *Radio Condenser Case*, again urges, this time illustrating his argument by the said charts, that plungers and levers were used as equivalents prior to his alleged invention. Such fact is immaterial here where we are concerned with the question of equivalency in a particular shaft positioning structure. The very fact that

appellant in his testimony sought to minimize, that is, the traveling in an arcuate path by levers and in a straight path by plungers, is itself determinative of the issue of equivalency. It is this fact that constituted the difference between the effect on industry of appellant's patented tuner and the Crosby push button tuner. Appellant has admitted that not a single lever operated tuner, such as his patented tuner, has ever been manufactured and sold since the Zenith tuner, Defendant's Exhibit H, in 1930. Schwarz testified that one of the reasons the said Zenith tuner could not be used for automobiles and was abandoned in 1930 for household sets was its bulky nature due to the use of levers [R. 387]. This Zenith tuner embodies the showing of the Schaefer patent, and Judge McCormick found as a fact that such tuner failed of commercial success because of the bulkiness and unsightly appearance of the levers specified for such tuner [Finding of Fact No. 10, R. 52-53]. Crosley in the *Associated Case* testified that Crosley developed the push button tappet-rocker combination because the lever type was cumbersome [R. 537]. As is admitted by all parties, the Crosley tuner and the subsequently developed push button tuner have achieved overwhelming commercial success and, indeed, the Zenith tuner converted to a plunger type tuner as the General Motors tuner, Plaintiff's Exhibit 3, sold in the amount of 500,000 in 1939 and 1940 [R. 337].

Since, therefore, appellant insists in asserting an invalid scope for his patent, it is submitted that this Court should hold the patent void as an invalid reissue.

(b) Coaxiality Was Claimed in Defendant's Reissue Patent as an Afterthought and in Order to Cover After-Discovered Devices Not Falling Within the Scope of the Original Patent, and It Is Not the Same Invention Intended to Be Covered and Secured in Appellant's Original Patent.

Although this Court in dealing with the reissue patent in suit has not found it necessary to pass upon the point, in addition to the fact that the said reissue patent is invalid as failing to be for the same invention as was original patent No. 2,108,538 in respect to its failure to include levers as part of the claimed combination, said reissue patent is equally bad in that no vestige of intent appears upon the face of the original patent to cover or secure coaxiality as appellant's invention.

The parent application filed by appellant in 1934 [Deft. Ex. O, R. 843], from which original patent No. 2,108,538 was divided, but set forth the figures of the reissue patent in suit as Figures 14, 15 and 16 of such application, made no mention of coaxiality in the description of the application, and directed no claims therein to said coaxiality. When in 1937 appellant incorporated said Figures 14, 15 and 16 in the divisional application [Deft. Ex. P, R. 1001], which issued as original patent No. 2,108,538, he but alluded briefly in his description to the fact that the axes of the two tappets and two rockers therein described were coaxial and made no mention in the claims of coaxiality. When in 1938 the original patent issued, appellant had never written a claim to coaxiality, nothing was said about

coaxiality by description except for the aforementioned statement thereof, no statement of any problem requiring coaxiality was set forth in the description, no objects relating to coaxiality appeared therein, and no principle involving coaxiality was described. The original patent issued February 12, 1938. The independently designed coaxial Crosley tuner came on the market in January of that year, and it was not until appellant, after seeing the Crosley tuner and after having given notice of infringement under his original patent, and after having discussed the matter with the Crosley representatives [R. 299-300], on May 23, 1938, surrendered the original patent and made application for the reissue patent in suit, requesting for the first time claims which set forth coaxiality. Appellant had admittedly originally thought himself to be the inventor of the broad lever-tappet-rocker combination [R. 288], and it had never occurred to him to claim coaxiality as an actual invention. However, although he now denies it, he admitted in the *Associated Case* that he modified the claims of his original patent in the reissue so that they would cover the Crosley tuner [R. 300-302] and, in so doing, claimed coaxiality.

Whereas appellant now seeks to sustain claims 7 through 11, inclusive, of his reissue patent on the basis of the aforesaid coaxiality, reference to claims 1, 2, 3, 4 and 6 and, indeed, disclaimed claim 5 of his original patent, shows nothing on the subject of coaxiality. In the previous litigation, and below, appellant argued that claim 1

of the original patent evidenced an intent to claim coaxiality in stating:

“* * * a plurality of adjustable members pivoted to said lever at a point substantially as far from the fulcrum of said lever as said axis is from said fulcrum, * * *.”

This statement has nothing to do with coaxiality. In a double tappet, double rocker combination for both radio and television, such as was being claimed by appellant, this equidistant condition of rocker axis and tappet axis is necessary to assure that the two tappets will fully engage the two rockers. It does not define coaxiality which requires that the axes be not only equidistant from the fulcrum of the lever, but that the axes be aligned vertically when in contact. Appellant testified that he achieved his coaxiality by imparting a special shape to his tappet [R. 153, 154, 274, 275]. Yet, nowhere in the original patent claims or in the original description is a description of the shape of appellant's tappet set forth, let alone given a purpose or described in such a way as to give evidence of intent to secure coaxiality for his invention.

The record therefore establishes conclusively that no more can appellant now claim coaxiality for the invention of his reissue patent than can he claim that a leverless combination is covered by said reissue patent. Yet, since appellant bases his entire case of invention on such coaxiality and admittedly cannot sustain said reissue patent as an invention without coaxiality, said reissue patent must be held invalid under the statute as directed to a different invention than was original patent No. 2,108,538.

5. Even if This Court Holds the Patent in Suit Valid, It Should Follow Its Prior Decisions and Hold It Not Infringed by the Devices of Appellee.

The accused tuners in the instant case are represented by Plaintiff's Exhibits 6 and 7. Plaintiff's Exhibit 7 incorporates a rocker, a tappet and a plunger, the plunger pivotally carrying the tappet and sliding the same transversely to assume a coaxial position against the rocker. Plaintiff's Exhibit 6 includes a rocker, a tappet and a slidable plunger, but the plunger does not pivotally carry the tappet but rather supports an arcuate guideway, which in turn slidably supports the tappet. Such tuner, Plaintiff's Exhibit 6, therefore, is the same as Plaintiff's Exhibit 7, except that instead of providing an opening in the rocker which receives a portion of the tappet, it provides an opening in the tappet which receives a portion of the rocker. Both tuners are patentwise the same and neither includes a lever.

This Court in *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722, held that the Crosley tuner [Ex. 3 attached to complaint, R. 11], was not an infringement of the patent in suit because such tuner included plungers rather than levers. Such tuner is admittedly patentwise the same as the accused tuners in suit. This Court likewise held in *Leishman v. Radio Condenser Co., et al.*, 167 F. 2d 890, that the Radio Condenser tuners and the General Instrument tuners [Exs. 4 and 5 attached to the complaint, R. 12 and 13] were not infringements of the patent in suit because such tuners included plungers rather than levers.

Judge McCormick below made no express holding with respect to infringement but did indicate that, if necessary, under his decision he would have held that the accused

tuners do not infringe the patent in suit. This, of course, was compulsory on the part of Judge McCormick in view of the *Associated Case*, and in view of the *Radio Condenser Case*, the latter case having expressly set forth the duty of the court below to follow the decision of this Court in the *Associated Case*.

Appellee has shown hereinbefore whereby appellant's argument attacking the decision in the *Associated Case* is but reiteration. Appellee has shown hereinbefore that appellant's asserted new evidence respecting the drawings of the reissue patent is immaterial. Appellee has shown hereinbefore that the various charts and the like illustrating appellant's repetition of his old argument that plungers and levers are equivalents are not new evidence.

It is submitted that this Court should not overrule its two prior decisions in the absence of the most compelling reasons. Since the decision in the *Associated Case* by this Court in 1943, manufacturers of plunger type tuners have relied on that decision and have produced and sold plunger type tuners accordingly. Such reliance was proved justified when this Court reaffirmed its decision in the *Radio Condenser Case*. Uniformity of justice requires that in the event it becomes necessary to decide the question of infringement in this case this Court hold that the aforesaid plunger type tuners, including those of appellee, do not infringe the patent in suit.

Respectfully submitted,

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No. 12,485

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

LEROY J. LEISHMAN,

Defendant-Appellant,

vs.

GENERAL MOTORS CORPORATION,

Plaintiff-Appellee.

APPELLANT'S REBUTTAL BRIEF.

LEROY J. LEISHMAN,

In Propria Persona.

FILED

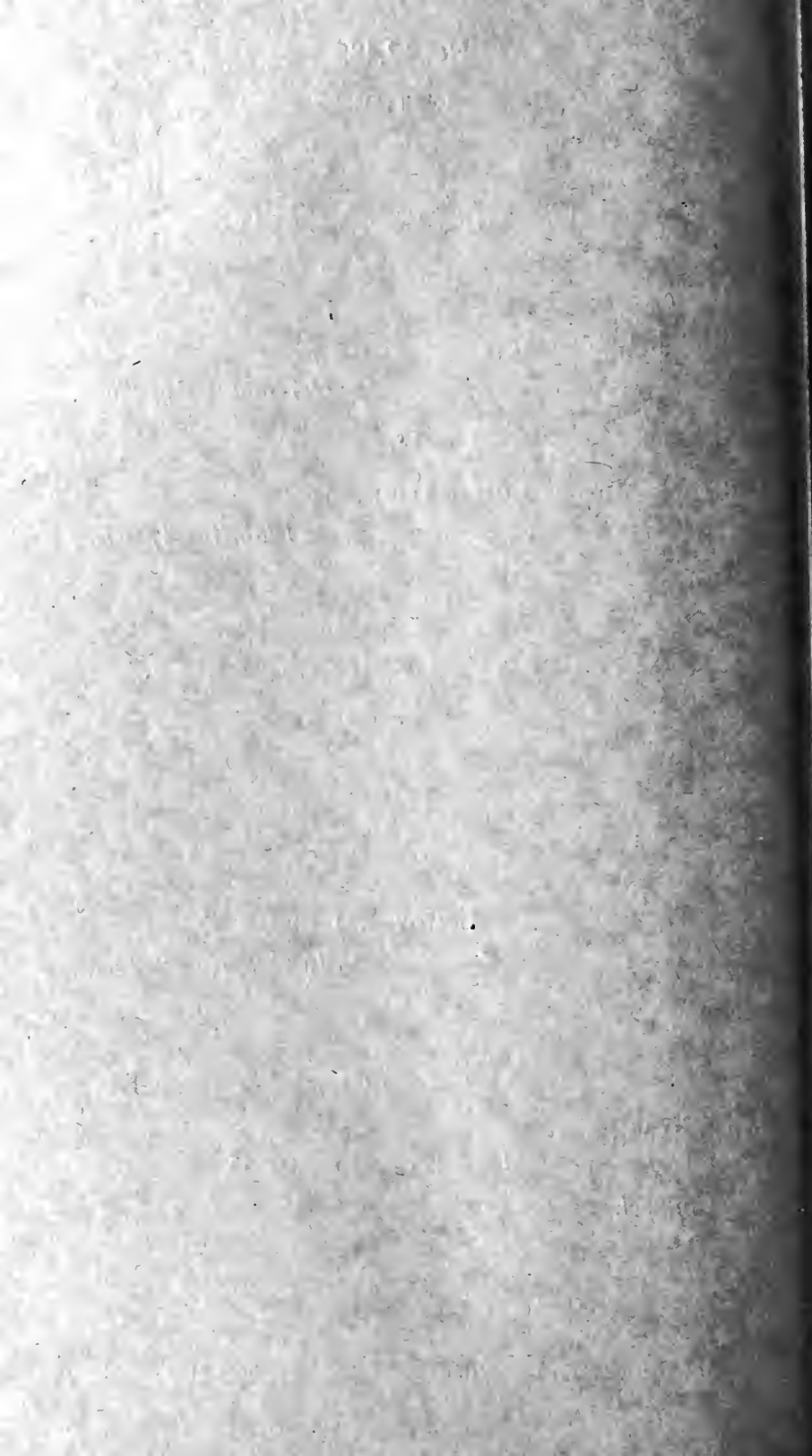
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Plaintiff-Appellee.

APPELLANT'S REBUTTAL BRIEF.

I.

Introduction.

Appellee's Reply Brief is primarily a strong attempt to create the false impression that there has been practically a unanimity of opinion against the present defendant on all issues among the courts that have considered the patent here at issue, and appellee would have this Honorable Court feel that the weight of opinion against validity and infringement is so heavy that little attention need be paid to the evidence now before it. Actually, there has been such a wide divergence in the previous opinions that this Honorable Court is clearly called upon to thoroughly reappraise the findings in the light of the evidence and to base its decision solely upon the facts.

Another thing that should alert this Honorable Court to far more than the usual vigilance in the instant case

is the opinion of the U. S. District Court for the District of New Jersey in *United States v. General Instrument Corporation, Radio Condenser Company et al.*, 87 Fed. Supp. 157. These violators of the Sherman Act were the plaintiffs-appellees in the last appeal that reached this Honorable Court respecting this patent, the suit having been filed as a part of their illegal activities. They sought to monopolize the manufacture of variable condensers and coaxial rocker-and-tappet tuners for resale to manufacturers of radio sets. Leishman tried unsuccessfully by means of interrogatories in the lower court here to bring out some of the irregular conduct of these litigants, and he would have pursued the matter further at a trial had not the opportunity been denied him by the hasty termination of the proceedings by summary judgment. One of the exhibits in the government's case against these conspirators was a letter from Maxwell James whose name appeared on their appeal brief before this Honorable Court. In that letter¹ Mr. James said that Condenser Development Company, the *alter ego* for Radio Condenser and General Instrument, had aided the attorneys in the *Associated* case in this circuit. Appellee's Exhibit No. 1 in the instant case [R. 695] is another letter from Maxwell James, written on behalf of General Instrument Corporation. These companies found guilty in the government's case have thus had a finger in all the litigation regarding this patent in this circuit. In his letter in the present record, Mr. James says that a weight and a spring are equivalents for rais-

¹It is believed that this Honorable Court may wish to take judicial notice of this letter, and a copy, certified by the clerk of the U. S. District Court for the District of New Jersey, is therefore being filed herewith as Defendant's Exhibit AAAA. The pertinent part appears in the Appendix at the back of this brief, pp. 3 and 4.

ing tappets *up*, but he won the aforementioned summary judgment against Leishman on the irreconcilable ground that plungers and levers are *not* equivalents for pushing them *down*.

On page 5 of its brief, appellee correctly says: "In spite of the complicated litigious history of the patent in suit, the issue on this appeal is not complicated." *None* of the issues have been complicated. One naturally wonders, then, why the litigious history has been complicated. Examination of the opinions soon reveals that the complications regarding the issue of validity have arisen because two courts blindly followed previous decisions instead of the evidence before them. Appellee now wants this Honorable Court to do the same. Brief references to the previous opinions will show wherein the complications have arisen, and should make it apparent that the present appeal can only be decided by returning to the facts and making a completely new adjudication.

The first decision of invalidity was that of Judge Harrison, rendered on a very incomplete record in the *Associated* case. He held the claims here at issue invalid for want of invention. On appeal, counsel for the present plaintiff tried very hard to support Judge Harrison's opinion, but were unable to convince this Honorable Court that the holding of invalidity for want of invention should be affirmed. The rule then, as now, was that the findings of a lower court are not to be disturbed unless clearly in error. This Honorable Court disturbed Judge Harrison's findings, saying:

"* * * The judgment declares that the claims 'are invalid for want of invention.' In the view we take, the declaration is unnecessary. As to its correctness or incorrectness, we express no opinion.

“The judgment is modified by striking therefrom the above quoted declaration and, as thus modified, is affirmed.” (137 F. 2d 722, 727, 728.)

The presumption of validity was thus restored to the patent, and the holding of invalidity was wiped out.

The next decision was that of the District Court for the Western District of Oklahoma in *Leishman v. The Richards and Conover Company*, Civil Action No. 2155, involving tuners patentwise the same as those now before this Honorable Appellate Court. Judge Chandler there held the claims “clearly valid and clearly infringed.” This decision, following that in which this Honorable Court wiped out Judge Harrison’s holding that the claims were invalid for want of invention, strongly reinforced the presumption of validity.

When the *Richards and Conover* case was appealed, the Court of Appeals for the Tenth Circuit manifestly overlooked most of the evidence and testimony, and based the first of its two decisions upon an uncritical reading of Judge Harrison’s opinion in the *Associated* case. The Court of Appeals for the Tenth Circuit even paraphrased the same obvious errors. Judge Harrison, in explaining why he thought the provision of a coaxial relationship between the tappet and rocker did not amount to invention, said (36 Fed. Supp. 804, 808):

“The importance of the mechanical relationship is well known in the art and a feature that must be considered in all machine designing when you desire parts *to move together harmoniously* and free from friction. . . . It is a mechanical principle that is hundreds of years old.” (Emphasis added.)

Entirely overlooking that the purpose of the coaxial relationship in Leishman's structure was just the opposite from this, and that its purpose was to *prevent* absolutely *all* rotation of the rocker during the adjusting process, the Court of Appeals paraphrased Judge Harrison's clearly erroneous statement and held (172 F. 2d 365, 369):

"The principle of coaxial relationship and its importance, where it is desired that two parts of a machine *operate together harmoniously*, has been within the knowledge, for many years, of ordinary mechanics skilled in their art." (Emphasis added.)

In Leishman's Petition for a Rehearing, he pointed out the clear error of the Court, saying:

"In correctly explaining that coaxiality of the tappet and rocker is for the purpose of *preventing movement*, and then ruling that no invention is involved because the coaxial relationship has been known for many years 'where it is desired that two parts of a machine *operate together harmoniously*', the written opinion of this Honorable Court has failed to distinguish between two things that are diametrically opposite.

"The Court has properly held that:

'The principle of coaxial relationship and its importance where it is desired that two parts of a machine operate together harmoniously, has been within the knowledge, for many years, of ordinary mechanics skilled in the art.'

But the corollary of this is that appellee's use of coaxiality for the *prevention of rotation* of the tappet and rocker, was in direct conflict with the teachings of the prior art and therefore beyond the knowledge

of ordinary mechanics. Appellee's contribution accordingly would rise to the dignity of invention if judged by the formula given in the opinion.

"It thus appears that the Court's ruling of invalidity may have been inadvertent or that the paradox of the two conflicting propositions appearing in the opinion was not apparent to the Court because of the absence of four physical exhibits which had been designated as part of the record on appeal, or because the Court may have failed to consider certain testimony of defendant's expert witness that was of course binding upon the defendant."

The requested rehearing was granted, but the court, instead of admitting and correcting its error, said not a word about the error in its new opinion but sought to justify its first decision by making a purported mathematical analysis of the reasons for creeping. The greater errors into which the Court then fell have been thoroughly demonstrated in Appellant's Opening Brief and in the affidavits of the Professor of Mechanical Engineering of California Institute of Technology, the Professor of Mechanical Engineering at the University of Southern California, as well as those of other reputable authorities. Without reiterating these errors here, suffice it to say that there would have been no need for the Court of Appeals for the Tenth Circuit to render a second opinion if it had followed the evidence instead of adopting Judge Harrison's opinion without comparing it with the facts.

Although it was the manifest duty of the court below to decide the present case on the evidence before it, and to resort to comity only in the event that it was in doubt after thoroughly weighing all the facts, the Court never-

theless stated during the first hours of the trial that it wasn't going to decide this case until it found out what the Court of Appeals for the Tenth Circuit was going to do. The following appears in the record of the first day's proceedings:

"The Court: Was the case in Oklahoma appealed?

The Witness: Yes, it was appealed and the record has been printed and the appellant has already filed its brief and we were due to file ours next week in printed form but due to this case we have asked for an extension of 30 days to give us time to prepare it.

The Court: You had better file it. I don't think you need to worry about this case until it is filed there. *I would like to see what the Circuit Court of Appeals there says about it.*

Mr. Flam: That is quite impossible for us to do unless you continue this trial.

The Court: I am not going to continue it now. I think it might have been continued but it wasn't. However, I am not going to decide this case until you have sufficient time to prosecute your appeal or the other side does.

Mr. Flam: I think Judge Yankwich was very adverse to any continuance.

The Court: He was but he isn't trying the case now. I am controlling the case now.

The Court: Now, I am not going to continue it at all but *I am not going to decide it either until you have an opportunity to have the Tenth Circuit Court of Appeals pass on it.*

You have a decision from the Ninth Circuit—you have two decisions from the Ninth Circuit and *I want to know what the Tenth Circuit says about it.*" [R. 185-186.] (Emphasis added.)

This intention to lean on the decision of the Court of Appeals for the Tenth Circuit was voiced by the Court below before it had any idea of the nature of the evidence that would be presented.² The subsequent statement in the lower court's decision that it was greatly influenced by the opinion of the Court of Appeals for the Tenth Circuit is thus not surprising. The allusions to the present record extend only from the bottom of page 46 to the middle of page 48, Vol. I.

These last two decisions of invalidity thus came about by placing reliance on previous opinions, instead of carefully examining the evidence. Appellee's brief is a strong plea to get this Court to do the same.

²Such a procedure is in marked contrast to the recommendations of the Supreme Court in *Mast, Foos & Company v. Stover Manufacturing Company*, 177 U. S. 485, 488; 20 S. Ct. 708, 710; 44 L. Ed. 856, 858, where the court said:

"Comity persuades; but it does not command. . . . It recognizes the fact that the primary duty of every court is to dispose of cases according to the law and the facts; in a word, to decide them right. In doing so, the judge is bound to determine them according to his own convictions. If he be clear in those convictions, he shall follow them. It is only in cases where, in his own mind, there may be a doubt as to the soundness of his views that comity comes in play and suggests a uniformity of ruling to avoid confusion, until a higher court has settled the law. It demands of no one that he shall abdicate his individual judgment," (Emphasis added.)

II.

The Findings of the Lower Court Do Not Have the Finality That Appellee Alleges.

- (a) Even Where the Findings Have Some Support, Which Is Not True Here, the Appellate Court Is Not Bound by Them if Other Facts Show the Conclusions to Be in Error.

Appellee's argument begins with the assertion that a finding of fact, such as a finding of lack of invention in this case, must not be disturbed.

Such a finding, based upon physical evidence and documentary evidence, does not have the weight attributed to it by appellee. Especially is this the case where the trier of facts is the Court and not a jury.

One of the clearest expressions of this matter is found in the recent Supreme Court case of *United States v. United States Gypsum Co.*, 333 U. S. 364, and particularly page 395. The Court uses the following explicit language:

"* * * Since judicial review of findings of trial courts does not have the statutory or constitutional limitations of findings by administrative agencies or by a jury, this Court may reverse findings of fact by a trial court where 'clearly erroneous.' The practice in equity prior to the present Rules of Civil Procedure was that the findings of the trial court, when dependent upon oral testimony where the candor and credibility of the witnesses would best be judged, had great weight with the appellate court. The findings were never conclusive, however. A finding is 'clearly erroneous' when although there is evidence to support

it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed.”

This statement by the Supreme Court regarding the effect of findings is authoritative reiteration of the doctrine expressed in decisions of appellate courts throughout the country. Thus in *Kuhn v. Princess Lida of Thurn & Taxis*, 119 F. 2d 704, decided by the Court of Appeals for the Third Circuit, the following statement appears at page 706:

“The sufficiency of the evidence to sustain a trial court’s conclusion or finding of an ultimate fact remains appropriate matter for an appellate court’s consideration. *State Farm Mutual Automobile Insurance Co. v. Bonacci et al.*, 8 Cir., 111 F. 2d 412, 415. Where the evidentiary facts are not in conflict or dispute, the conclusions to be drawn therefrom are for the appellate court upon review of the trial court’s action. Cf. *United States v. South Georgia Railway Co.*, 5 Cir., 107 F. 2d 3, and *United States v. Mitchell*, 8 Cir., 104 F. 2d 343, 346. An incorrect conclusion by a trial court qualifies as a ‘clearly erroneous’ finding, for the correction whereof on appeal Rule 52(a) specifically provides.”

In fact, in our own circuit the Supreme Court’s decision hereinabove referred to was applied. In *Pacific Portland Cement Co. v. Food Machinery & Chemical Corporation*, 178 F. 2d 541, this Honorable Court at page 548 says:

“* * * Full effect will always be given to the opportunity which the trial judge has, *denied to us*,

to observe the witnesses, judge their credibility, and draw inferences from contradictions in the testimony of even the same witness. *Savage v. Lorraine*, 9 Cir., 1945, 148 F. 2d 818; *Augustine v. Bowles*, 9 Cir. 1945, 149 F. 2d 93, 96; *Lincoln National Life Ins. Co. v. Mathisen*, 9 Cir., 1945, 150 F. 2d 292, 295-296. This is the meaning of the provision that findings should not be set aside unless clearly erroneous. *Grace Bros. v. Commissioner*, 9 Cir., 1949, 173 F. 2d 170, 173-174. In contrast, the Supreme Court has told us that, 'A finding is "clearly erroneous" when although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed.' *United States v. United States Gypsum Co.*, 1948, 333 U. S. 364, 395, 68 S. Ct. 525, 542, 92 L. Ed. 746."

In a still later case, *Orvis v. Higgins*, 180 F. 2d 537, the Court of Appeals for the Second Circuit states as follows on page 539:

"Where a trial judge sits without a jury, the rule varies with the character of the evidence: (a) If he decides a fact issue on written evidence alone, we are as able as he to determine credibility, and so we may disregard his finding. (b) Where the evidence is partly oral and the balance is written or deals with undisputed facts, then *we may ignore the trial judge's finding and substitute our own*, (1) if the written evidence or some undisputed fact renders the credibility of the oral testimony extremely doubtful, or (2) if the trial judge's finding must rest exclusively on the

written evidence or the undisputed facts, so that his evaluation of credibility has no significance.” (Emphasis added.)

In the present instance the basic facts regarding the question of invention are undisputed. The documentary evidence, including the patents of Cunningham, Marschalk and Schaefer, is of course undisputed, nor is there a scintilla of evidence in conflict regarding the interpretation and meaning of these important documents.

Accordingly, the rule as expressed in the Supreme Court case and in *Pacific v. Food Machinery* applies. This Honorable Court may reappraise the evidence independently of the findings.

(b) There Is No Evidence Whatever to Support the Lower Court's Findings With Respect to the Issue of Invention.

On page 28 of its brief, appellee says:

“Judge McCormick below found as a fact that the patent in suit lacked invention [Finding of Fact No. 15, R. 54]. Appellee has shown hereinbefore that under fundamental principles of appellate review, a mere existence of evidence from which invention might be inferred is not competent to upset an express finding of fact of non-invention where substantial evidence supports such finding.”

Appellee here apparently admits the existence of evidence of invention, but nevertheless insists that there is substantial evidence to support the finding of non-invention. Re-

garding the latter point, appellee's brief says on pages 13 and 14:

"* * * To induce this Court to overturn Judge McCormick's findings of fact, appellant must demonstrate that there exists no evidence in the record which might have led Judge McCormick to his conclusion that the patent is anticipated and lacks invention. This, appellee submits, appellant has not even purported to do."

Appellant not only purported to do what appellee says he did not purport to do, but he demonstrated in the opening brief that there exists no evidence whatever to support Judge McCormick's conclusion that the patent is anticipated and lacks invention. The lower Court's only references to the record before it had to do with the Marschalk, Schaefer and Cunningham patents. Appellant's opening brief showed that the lower Court was entirely in error in holding that appellant's structure was anticipated by Marschalk and Schaefer, and it was also demonstrated that the Cunningham device was from a remote and non-analogous art and that it had to be substantially altered in both structure and mode of operation in order to be given a semblance of pertinence. Appellee has discussed these references in an attempt to make it appear that there is something about them that might be interpreted as supporting Judge McCormick's findings. What appellee has said in this respect will be hereinafter treated in connection with each of the arguments which appellee has raised with regard to these specific patents.

III.

The Problem Effectively Solved by Appellant Did Not Originate With Marschalk as Appellee Contends, but Confronted Every Inventor Who Undertook to Provide an Adjustable Tappet Tuner.

Appellee's statements that the problems solved by appellant was posed by Marschalk (App. Br. p. 30) and "could not have been present prior to 1937" (p. 34) are inconsistent with appellee's own argument in support of the lower Court's erroneous finding that *appellant's solution to the creeping problem is anticipated in the light of the teachings of Marschalk and Schaefer*. If the creeping problem was first posed by Marschalk, how can appellee urge that Schaefer, who preceded Marschalk by four years, had a solution for creeping? Appellee's thesis refutes itself. If the problem originates with and is posed by, the device shown in the Marschalk patent, as appellee now contends, how can appellee also argue that Marschalk himself teaches the solution to the problem? Actually, the creeping problem confronted *everyone* who undertook to provide an adjustable tappet tuner *regardless of whether he worked before or after Marschalk*, but the peculiar behavior of his device, which he did nothing about, demonstrates the problem that confronted every worker in the art. The laws of nature did not suddenly change and pose a problem for Marschalk only. Neither Schaefer nor Leishman had ever heard of Marschalk when they encountered the problem; but since Marschalk had no solution of any kind, his device demonstrates in an effective manner the peculiar dif-

difficulty that faced everyone who undertook to provide an adjustable tappet tuner. Schaefer, who preceded Marschalk, had a solution for the creeping difficulty, but it was vastly different from Leishman's and required eighteen more parts.

In an effort to confuse the court, appellee attempts to reverse history regarding when rockers were introduced, appellee's brief (p. 18) saying: "When Marschalk substituted for the rack and pinion of Schaefer the rocker of Marschalk, the deletion [of parts] of which appellant speaks was compelled, a rocker inherently including less parts than a rack and pinion system." Actually, long before Schaefer, the customary procedure was to employ rockers engaged by tappets, and the rack and pinion system did not appear until Schaefer introduced it to eliminate the difficulties that confronted everyone who undertook to make the tappet adjustable.

Kettel and Woodbridge, discussed in appellant's Opening Brief on pages 14 to 17, both used rockers that were directly engaged by tappets, as shown in the pertinent figures from their patents reproduced on the folding insert at the back of the appendix to appellant's Opening Brief. Judge Harrison correctly asserted, after describing the Woodbridge device, that "the problem before any person desiring to adapt a rocker and tappet to a radio tuning device was to develop a means for an accurate and simple method of adjusting the tappet so that it would, when in complete engagement with the rocker, rotate it to the angle

required to bring in the particular station that the user might designate." (36 Fed. Supp. 804, at 808.)³

In the *Radio Condenser* case as well as in the present case the Kettel and Woodbridge patents, both of which employ rockers engaged by tappets, are respectively the first and third patents on the pertinent prior art cited right in the complaint, and appellee's counsel is thus hardly in a position to assert now that Marschalk introduced the rocker and was responsible for eliminating the rocker and pinion system. Schaefer *departed* from the prior art by separating his tappet from the rotatable member and interposing the rocker and pinion system that eliminated creeping in his device, and the Schaefer-Zenith tuner and the Schwarz-General Motors tuner are the only ones in the art that have employed it.

In attempting to support Judge McCormick's finding that the Marschalk device was an anticipation of appel-

³The idea of the pertinence of the Woodbridge device in which the rocker was engaged by fixed tappets, did not originate with Judge Harrison but rather with the present appellee's counsel and expert, Mr. Leonard S. Lyon, Sr., and Dr. Mackeown, who opposed the patent in the *Associated* case. In the *Associated* case the Woodbridge patent was not cited in the original answer to Leishman's complaint (p. 7 of the *Associated* record, Appeal No. 9970) but was included in an amendment to the answer [R. 12 of the *Associated* record] that was filed by Lyon and Lyon. The present counsel at that time recognized that it was pertinent prior art, and it was considered of such importance to the case that it was discussed by Dr. Mackeown in the portions of his testimony in that case extending from pages 418 to 420, and it was again referred to on page 443.

In recognizing that rockers engaged by tappets were old in the prior art, as shown by Woodbridge, and that the problem before the radio industry was to develop "an accurate and simple method of adjusting the tappet," Judge Harrison thus merely adopted the thesis that counsel now denies by stating that "the problem could not have been present prior to 1937."

lant's structure, appellee erroneously makes the statement regarding Marschalk's device on page 15 that "the mechanism for rotating the condenser shaft and thus tuning the receiver, however, is the same as that of the re-issue patent in suit." This, of course, is manifestly incorrect, because the Marschalk device does not employ appellant's method or structure for eliminating creeping; in fact, it employs nothing whatever to eliminate this difficulty, but exhibits it in marked degree.

After incorrectly stating that the Marschalk and Leishman devices are the same, appellee's brief then says (p. 18) that "the Marschalk patent, which followed the Schaefer patent and Zenith tuner, did not include this coaxiality is easily understood in view of the fact that in the Marschalk patent the levers of the tuner were intended to be automatically operated by electric control means including solenoids for control by timing devices, whereas the Schaefer patent and Zenith tuner were for hand-operated radio sets, . . ." Why this should have made the inclusion of the coaxial relationship less desirable, appellee does not say. Actually, the fact that the Marschalk device was electrically operated greatly *increased* the desirability of employing an effective way to eliminate creeping. In an attempt to minimize the setting difficulty in the Marschalk structure appellee's brief (p. 19) quoted Judge Harrison's trial comment as follows:

"The court has tried the instrument and the witness' testimony does not add anything to what the court has already ascertained from an examination

and an effort on its part to work the mechanical device. I had no difficulty in setting the device at the extreme end, *but it is true that a person has to use a greater amount of care.* That was the result of the court's own experiment with the instrument." (Emphasis added.)

Even with the advantage of having the mechanism in the open before him, stripped of the cabinet and other parts that would complicate the problem and make it difficult to see what he was doing, Judge Harrison nevertheless had to use "a greater amount of care" than when setting a tuner containing the coaxial relationship that the industry has now adopted on such a large scale because "this system is so simple and foolproof," to use the words of the Zenith Corporation [Deft. Ex. FFF, R. 1140]. When the Marschalk mechanism is in its cabinet and connected to the solenoids, the difficulties are magnified. The solenoids pull the tappet down with a bang; and since it is thus not manually operated, there is no opportunity to use any care whatever. It consequently becomes almost impossible to set the device.

Appellee's reasons why Marschalk did not employ a coaxial relationship between his tappet and rocker are thus manifestly whole cloth. Marschalk did not employ this method of eliminating creeping for the same reason that it was not employed by Schaefer and Schwarz and Soffietti and Lane and Mackey—it did not occur to them and was beyond their mechanical skill and rose to a level of invention that they did not possess.

IV.

The Axis of Schaefer's Tappet Is Widely Spaced From the Axis of His Rotatable Member, and Appellee's Attempt to Import Some Other Axis Into Schaefer's Device Is Pure Sophistry. There Is Nothing in the Record to Dispute the Testimony That Schaefer Avoided Creeping by the Interposition of Extra Parts Between His Tappet and Rotatable Member.

Appellee contends, in the subheading on page 16 and in the argument on pages 17 to 20, that the Schaefer device embodies the coaxial relationship and anticipates appellant's use thereof; and appellee's argument is largely an attempt to import an extra axis into Schaefer's structure and to make it appear that this non-existent axis is coaxial with that of the tappet. This argument is pure sophistry.

The drawings of the reissue patent here at issue disclose the coaxial relationship between the rotational axis of the tappet and the rotational axis of the rocker; the specification describes the coaxial relationship between the rotational axis of the tappet and the rotational axis of the rocker; and the claims that mention the coaxial relationship specifically mention that the axis of the tappet is coaxial with the axis of the rocker when these members are in complete engagement. It is obvious upon even a cursory inspection of Schaefer's device or his patent, or the drawing of the pertinent parts thereof on page 27 of Appellant's Opening Brief, that there is no such relationship in the Schaefer structure, and that the axis of his tappet 56, instead of being coaxial with the axis of his rotatable member 9, is actually widely spaced therefrom.

The axis in appellant's combination that is coaxial with that of the tappet is clearly a rotational axis. Moreover, it is an axis of rotation around which the rotatable member rotates. The corresponding axis in Schaefer is the axis of his rotatable positionable member 9, and there is no rotational axis that is coaxial or coincident with the axis of the tappet.

If the lower court's findings about Schaefer were supported by evidence, such evidence would necessarily have to show a second rotational axis coaxial with the axis of the tappet. As there is no such axis and no such evidence, appellee attempts to create one by sophistry. In effect, appellee's argument is substantially this: If we assume an axis in the Schaefer mechanism that is coaxial with the axis of the tappet, the axis of the tappet and the assumed axis will be coaxial. A coaxial relationship can be imported into absolutely any device by that type of argument.

Appellee's brief says (p. 17): "It will be noted that in the Schaefer device the arms numbered 32 and 34 of the rack and pinion move symmetrically about a line or axis. This axis or symmetrical point is located midway between the arms 32 and 34, and horizontally at a point aligned with the arms 32 and 34 when the said arms are moved to a common level." There obviously is no such axis in Schaefer's device, and whether or not there is a symmetrical point midway between the arms 32 and 34 is entirely immaterial. There is a symmetrical point between a person's eyes and between a person's ears, but this can hardly be called an axis. Such a symmetrical

point is far removed from what we are talking about in this case.

Appellee hypothecates "this axis or symmetrical point . . . horizontally at a point aligned with the arms 32 and 34 when the said arms are moved to a common level." Appellee does not say *what part* of the arms 32 and 34 this point is aligned with. The specification and claims of the patent here at issue require that the axis of the tappet be aligned with the rotational axis of the rocker. Since Schaefer's arms 32 and 34 have no rotational axis, appellee of course was at a loss to state just what portion of the arms 32 and 34 is referred to in this statement that the point is horizontally aligned with these arms. If a rocker instead of the arm and rack system were employed in Schaefer's mechanism it would make a great deal of difference where the rotational axis of the rocker would be located, because the rocker and tappet must obviously be so designed with respect to each other that the two rotational axes will be coincident. If the axis of the rocker is located below the surface of the rocker, the axis of the tappet must also be below that surface; but if the axis of the rocker should happen to be in line with the top surface of the rocker, then the axis of the tappet would also have to fall on that surface. Since there is no possibility whatever for a coaxial relationship between the axis of Schaefer's tappet and the rotational axis of members that do not rotate, appellee of course found it impossible to say just *what part* of the arms 32 and 34 are horizontally aligned with the non-existent axis that appellee is trying to import into the Schaefer mechanism in order to support the lower court's findings.

According to appellee's argument, the hypothetical axis or symmetrical point is aligned with the arms 32 and 34 only "when the said arms are moved to a common level." In rocker and tappet tuners a coaxial relationship must prevail at *all* times, for it is only when these members are *tilted toward extreme angular positions* that creeping ever occurs. A coaxial relationship that prevailed only when these members are "moved to a common level" would thus not be the least helpful for the elimination of creeping.

Appellee alleges that Schaefer shaped his tappet in order to secure a coaxial relationship with the axis which appellee imports into his device. The shape of Schaefer's tappet has nothing whatever to do with a coaxial relationship nor with the elimination of creeping. The tappet can be shaped so that its axis is far above the bars 32 and 34 and creeping still will not occur. The axis of the tappet may also be moved sideways in either direction and the operation of the tuner will not change in the least unless parts actually strike each other due to lack of clearance.

Schaefer prevented creeping by separating his tappet from the rotatable member that is to be positioned and *by interposing ten movable parts between them, these parts having eight guides*. This was explained by Leishman at the trial (see Op. Br. pp. 25-28), and his testimony that Schaefer eliminated creeping by adding 18 extra parts was not disputed by anybody and he was not even cross-examined on the point.

- (a) Had Appellee Not Waited Until After the Trial to Urge That Creeping Was Prevented in Schaefer's Tuner by an Alleged Coaxial Relationship, This Sophistry Could Have Been Exposed by Cross-Examination Before the Court as It Was in Oklahoma.

Appellee's post-trial argument that Schaefer prevented creeping by a coaxial relationship, is particularly pernicious because it was presented at a time when it could not be exposed by cross-examination and expert testimony before the trial judge. The sophism originated in the present form in The Richards and Conover case, where it was advanced by the attorney and expert opposing the patent, but the questions of Mr. Flam and Judge Chandler resulted in the expert's admitting that the argument was fallacious and that there was no coaxial relationship in the Schaefer structure and that the position of the axis of the tappet had nothing whatever to do with the elimination of creeping in Schaefer's tuner.

Believing that the same argument might be advanced in the trial of the present case, appellant came to court prepared to explode the sophism in an even more effective way than at the Oklahoma trial. He brought a Schaefer mechanism to court in which the axis of the tappet was as far above the points of engagement as the axis of the tappet in the Marschalk device, and the axis could be moved from side to side. In no case would creeping occur, because creeping is prevented in the Schaefer structure by the interposition of extra parts between the tappet and the rotatable positionable member. But appellee did not advance the Schaefer-coaxiality argument at the trial. The only explanation of how creeping was prevented in the Schaefer device was appellant's explanation, and it was not disputed. Leishman asked Mr. Flam if the model

should be introduced anyway, and Mr. Flam correctly replied that it would not be proper rebuttal because the argument advanced in Oklahoma had not been advanced here, and that appellant's own explanation of the Schaefer tuner would prevail because it had not been disputed on cross-examination and no opposing testimony of any kind had been offered.

Had either of appellee's experts contended at the trial that there is a coaxial relationship in the Schaefer device, or that such alleged relationship prevents creeping in Schaefer's mechanism, the fallacy of such testimony could have been shown just as it was in The Richards and Conover trial. While the admissions of the expert opposing the patent in that case are of course not a part of the present record and are therefore not binding upon appellee, this Honorable Court may nevertheless take judicial notice of what could have happened to the Schaefer-coaxiality argument had it been advanced as testimony in court. Appellee provided the Court with a copy of The Richards and Conover record, and it was designated by stipulation of both parties hereto as one of the exhibits on appeal [R. 684]. The pertinent parts are quoted in the appendix hereto, pages 1 and 2.

(b) Appellee's Brief Erroneously Alleges That Schaefer's Tuner Passes Appellant's Own Test for Coaxiality, but This Written Test Was Prefaced by the Statement That It Was Applicable Only to Tuners in Which the Tappet Presses Upon the Rotatable Member; and Since Schaefer's Tappet Is Separated From His Rotatable Member by the Interposition of Ten Movable Parts, His Mechanism Is Not of the Type for Which the Test Was Formulated.

Appellee states in two places (pp. 18 and 20) that "The Zenith tuner was admitted by the patentee to pass the

test for coaxiality which the patentee himself had prescribed for the industry." This is absolutely untrue. The test which appellant prescribed for the industry was a test for ascertaining whether there was a coaxial relationship in tuners containing adjustable members, or tappets, that *press upon the rotatable member*. Since Schaefer's tappets do *not* press upon the rotatable member but are isolated therefrom by the interposition of ten movable parts, the Zenith-Schaefer tuner is not even of the type for which the test was devised. Inasmuch as the test was only valid for tuners in which the tappet presses upon the rotatable member, the part of Leishman's letter prescribing the test was preceded by this caution [R. 700]:

"If such tuner includes push buttons that carry adjustable members or cams [tappets] that move around a center (real or imaginary) and *if* such adjustable members [tappets] press on one side of the rotatable part of the tuner [rocker] when the button is pressed, causing it [the rocker] to turn until stopped by the other side of the adjustable member [tappet], . . ." then the test is applicable, but in the Schaefer device the tappet does not press upon a rotatable member causing such member to rotate until it is stopped by the other side of the tappet, and it thus does not come within the class of apparatus for which the test was prescribed.

Appellee's counsel nevertheless insisted at the trial that Leishman apply the test to the Schaefer tuner, and Leishman's objections on the ground that the test was inapplicable to such a tuner extend from the middle of page 309 to the middle of page 311. Counsel made a second attempt

to get Leishman to apply the test to Schaefer's device, and the objections were as follows:

"The Witness: Your Honor, that test was one to apply to a tappet—

Q. (By Mr. Lyon): I am not asking the witness to argue the question. I am asking him to make the test.

Mr. Flam: I will make the objection because the test prescribed by the witness as set forth by the letter, relates only to rotatable rockers and adjustable tappets and this device doesn't have a rotatable rocker at all." [R. 314.]

It might be said if we are dealing with animals and should find one which has four legs that such animal is a quadruped. But the test cannot be applied to chairs and justify the conclusion that a four-legged chair is a quadruped.

The statements in appellee's brief (p. 20) that "the Zenith tuner was admitted by the patentee to pass the test for coaxiality which the patentee himself had prescribed for the industry" is thus both untrue and malicious. Such efforts to import a coaxial relationship into Schaefer's device are an excellent demonstration of the fact that appellee has nothing substantial upon which to base its case.

None of the prior decisions or findings has recognized any coaxiality in the Schaefer mechanism. Judge Harrison's opinion said (36 Fed. Supp. 804 at 808): "The adjustable means used by the plaintiff was similar to Schaefer's and the coaxial feature was used solely to prevent play at the time of adjustment." This clearly signifies that Leishman's adjustable tappet and the means for clamping it in position are similar to that used by Schaefer,

which is true; but the coaxial feature referred to is clearly the coaxial feature in Leishman's own mechanism.

Judge Chandler in the Oklahoma case referred to the Schaefer structure in Finding 19 [Richards and Conover record, p. 31], which reads as follows:

"19. Schaefer, exhibit 20, Marschalk, exhibit 18, Lane and Mackey, exhibit 22, and Soffietti, exhibit 21, in Italy all tried to produce acceptable tuners using an adjustable tappet, but their tuners were all either more complex or much harder to adjust than plaintiff's simple structure."

The Court of Appeals for the Tenth Circuit recognized no coaxiality in the Schaefer device, but said (172 F. 2d 365 at 372) that:

"... he (Dr. Spotts) testified that where the rocker is mounted on a rotatable shaft, rather than as in prior patent to Schaefer No. 1906106, substantial coaxiality between the axis shafts and pin A would be necessary to avoid creeping."

This is certainly a recognition that there was no coaxiality in the Schaefer mechanism, but that coaxiality would be necessary if a rocker were used instead of all the extra parts employed by Schaefer.

Most anybody knows what an axis is. It therefore should be *obvious* to most anyone that nothing in the Schaefer tuner is at any time coaxial with the axis of the tappet. The attempt to import a coaxial relationship into the Schaefer mechanism by sophistry, merely shows the extremes to which appellee must go to try to produce something to sustain the lower court's findings about the Marschalk and Schaefer devices.

Findings 8 and 9 are manifestly clearly erroneous. The Marschalk and Schaefer devices do not anticipate Leish-

man and do not teach that creeping may be eliminated by the provision of a coaxial relationship between the axis of the tappet and the rotational axis of the rotatable member that is to be angularly positioned. Marschalk's device merely demonstrates the difficulty that must be overcome when using an adjustable tappet, and it shows that Marschalk himself knew of no way to do it. Schaefer's device demonstrates that the engineers of the Zenith Corporation knew of no better way to eliminate the creeping difficulty than by the interposition of ten movable parts between the tappet and the rotatable member that is to be angularly positioned, these movable parts requiring eight guides.

V.

In Its Argument With Respect to Cunningham's Gas Measuring Device, Appellee's Brief Ignores the Fact That Cunningham's Alleged Tappet Never Has to Be Adjusted to the Position of His Rocker, and That Nothing in His Mechanism Deals With a Problem Similar to the Creeping Problem That Arises in Adjustable Tappet Tuners. Appellee Cites No Authority That Says a Non-analogous Device May Be Altered in Structure and Operation and Passed Off as an Anticipation.

The "creeping" problem solved by appellant was never presented in the Cunningham gas-measuring device, and this device therefore cannot be urged as anticipating appellant's solution of the creeping problem. The peculiar "creeping" difficulty arises, as this court knows, when the tappet is being set to conform to the exact angular position that the rocker occupies when the desired station is tuned in. This "setting" is done by bringing the loosened tappet into firm engagement with the adjusted rocker so that the tappet will assume the same angular position as

the rocker. If the rocker is tilted, the pressure of the loosened tappet causes both the rocker and the loosened tappet to turn away from the adjusted position, and an accurate setting therefore cannot be effected. In Cunningham's device, the part that appellee calls "the tappet" is never set to conform to the position of the rocker; in fact, it is never brought into engagement with the rocker excepting when it is firmly clamped against all rotation. The situation that causes creeping in an automatic tuner is thus never present.

The part that appellee calls "the tappet" in the Cunningham device is adjusted periodically to conform to the height of a float that rises or falls with the pressure of flue gas, and it is always adjusted *when completely disengaged from the rocker*. After it is thus adjusted and clamped in position, it is then brought into contact with the rocker in order to move the rocker to the position to which the tappet was adjusted, this position having been determined by the height of the float in response to the pressure of the flue gas.

This is all admitted in the testimony of appellee's own expert, as shown in Appellant's Opening Brief, pages 56 to 60. Cunningham's device is thus completely non-analogous and was not used to solve an analogous problem. Furthermore, Cunningham's device had to be materially altered in order to simulate appellant's structure. (See pp. 60-64 of the Opening Brief.) Such a device does not anticipate. The law on this point was fully set forth and discussed in Appellant's Opening Brief.

In the trial of *Leishman v. The Richards and Conover Co.*, Judge Chandler dismissed the Cunningham device in the same way and for the same reason that this Honorable

Appellate Court dismissed the railway truck or “bogie” art in the *Six Wheel* case. Regarding the Cunningham mechanism, Judge Chandler succinctly said: “You mean to say the question doesn’t arise.” [P. 82 of the Richards and Conover record, which appellee has filed for the court’s information.] In the *Six Wheel* case, this Honorable Court dismissed the bogie truck art, as “a non-analogous art having different problems.” Cunningham’s device is likewise from a non-analogous art having different problems.

It is difficult to see why appellee cites the Supreme Court decision in *General Electric Co. v. Jewel Incandescent Lamp Co. et al.*, 326 U. S. 242, 90 L. Ed. 43, in support of its argument that the Cunningham patent has pertinence here. This decision deals, as appellee’s own brief shows, with a situation *in which no changes were required*. The patentee had merely found a new use for an old process. In the instant case, appellee’s model purporting to represent a portion of the Cunningham mechanism *was a departure both in structure and operation* from what Cunningham disclosed—all of which was admitted by appellee’s own witness, as pointed out in Appellant’s Opening Brief at the places hereinbefore mentioned. The *General Electric* case is thus inapplicable. The doctrine that applies here is that expressed by the Supreme Court in *Topliff v. Topliff*, 145 U. S. 156 at page 161:

“It is not sufficient to constitute an anticipation that the device relied upon might, *by modification*, be made to accomplish the function performed by the patent in question, if it were not designed by its maker, nor adapted, nor actually used, for the performance of such functions.” (Emphasis added.)

Appellee's brief mentions that the *General Electric* decision quotes from *Ansonia Brass & Copper Co. v. Electrical Supply Co.*, 144 U. S. 11, 36 L. Ed. 327, as follows:

"* * * 'the application of an old process to a new and *analogous purpose* does not involve invention, even if the new result had not before been contemplated.'" (Emphasis added.)

That, too, is inapplicable. As fully demonstrated in Appellant's Opening Brief and reiterated herein, appellant's purpose is *not analogous* to that of Cunningham.

There is no decision anywhere that says an infringer can take an old device and alter it in structure and in mode of operation and then pass it off as an anticipation of the patent whose teachings he desires to appropriate.

VI.

Appellee Attempts to Defeat the Evidence of Invention by Saying That Coaxiality Is a Common Expedient, But Appellee Neglects to Mention That the Purposes for Which It Has Been a Common Expedient Are Vastly Different From the Purposes Here and That Appellee's Own Expert Admitted That He Knew of No Instance Anywhere in Which It Had Ever Been Used for the Unorthodox Purpose of Preventing Unwanted Rotation of Engaging Members. Invention Cannot Be Disproved by Showing That Its Elements Are Individually Old.

The argument which appellee presents in this regard is the argument which confused Judge Harrison in the *Associated* case. The Court of Appeals for the Tenth Circuit did not at first see the fundamental error that appeared in Judge Harrison's decision regarding previous

uses of coaxiality and accordingly found it necessary to base its second opinion upon other grounds. This was pointed out on pages 4 to 6 hereof. This Honorable Court, however, has clearly stated the applicable law as follows:

“* * * invention cannot be defeated merely by showing that, in one form or another, each element was known or used before. (Citing many decisions.)

“The question is: Did anyone before think of combining them in this manner in order to achieve the particular unitary result, a new function? *If not, there is invention.* (Citing many more decisions.)” *Pointer, d. b. a. Pointer-Williamette Co. v. Six Wheel Corporation.* 177 F. 2d 153, 160. (The court’s own emphasis.)

Neither appellee nor anyone else opposing the patent here at issue has ever alleged that a coaxial relationship between two engaging members has ever before been used to prevent unwanted rotation. Appellee’s own expert testified that he knew of no such prior use. His testimony was quoted on page 68 of Appellant’s Opening Brief and it therefore need not be repeated here. The significance of his admission was discussed in the first two paragraphs on page 69 of the said Opening Brief.

It is easy to make generalizations, as appellee does about former uses of coaxiality. But the inapplicability of generalizations can often be shown by requiring specific examples, as was done at the trial by Mr. Lyon himself when appellee’s own expert Schwarz made the vague and meaningless generalizations now referred to in appellee’s brief as follows (p. 41):

“He further testified that the principle of coaxiality is understood by machine designers, that it is a mere

application of a principle of engineering amounting to the elimination of all moment arms, and that such principle was known to engineers from the time of his schooling. Furthermore, he testified that the elimination of moments by making things line up concentrically or coaxially is a well-known and well-established principle of engineering.”

Pressed for something more specific, Mr. Schwarz gave his testimony about a prick punch and a V-block, quoted in full on pages 12 to 13 of the Appendix to Appellant's Opening Brief. Mr. Schwarz' example was illustrated on page 12 of the said appendix and the discussion on pages 13 to 15 of the appendix showed that Mr. Schwarz' example was totally irrelevant and had nothing whatever to do with coaxiality.

To prove the irrelevant contention that coaxiality *per se* was old, appellee's brief quotes the testimony of Leishman's expert Loehr as it appeared in Judge Harrison's decision in the *Associated* case. Judge Harrison quoted Mr. Loehr in support of the statement in his opinion (36 Fed. Supp. 804, 808) that “The importance of the mechanical relationship [coaxiality] is well known in the art and a feature that must be considered in all machine designing when you desire parts to move together harmoniously and free from friction. The same principle is used in the crank shaft of any automobile.⁴ It is a mechanical principle that is hundreds of years old. Both

⁴The principle of a coaxial relationship is not used, and cannot be used, in the crank shaft of any automobile. A crank shaft has only *one* axis. Since “coaxial” means “having coincident axes,” the first requisite for coaxiality is that there be two or more members each with an axis; and the second requirement is that these two axes be coincident, or exactly in line.

the experts of the plaintiff and the defendant agree in this respect.”

Immediately after the foregoing statement in his opinion, Judge Harrison quoted the portion of Mr. Loehr’s testimony that appellee has requoted in its brief. Judge Harrison said:

“The plaintiff’s expert Leslie K. Loehr, testified as follows:

Q. Whenever you have two members that you want to turn together in the same orbit or to maintain contact with each other as they are turning together, you know that they should be on-center, isn’t that correct? A. Well, they may be coacting in such a way that the resultant would be a center.

Q. The resultant; either they are actually on-center or the result amounts to the same thing; isn’t that correct? A. Yes; so they will function together.

Q. In other words, this matter of putting these members on-center is one of the common tools and one of the common experiences of a machine designer? A. Yes. *If you have reference to machine elements in a machine; yes.*” (Emphasis added.)

Judge Harrison thus quoted Mr. Loehr’s testimony in support of the statement in his opinion that coaxiality was well known and that it is a feature that must be considered in all machine designing when you desire parts to move together harmoniously and free from friction. Inasmuch as these cited uses of coaxiality for enabling parts to move together harmoniously and free from friction are diametrically opposite from Leishman’s use of coaxiality

for preventing parts from moving at all, the portion of Mr. Loehr's testimony quoted by Judge Harrison actually constitutes much better evidence of the reason for the dilemma that faced those who tried to solve the *creeping* difficulty. Since coaxiality had been used for hundreds of years when you want parts to move together harmoniously, it was quite natural and logical that no one would think of using coaxiality to *prevent* two members from moving at all. One does not conclude that because a sieve permits water to run through freely it would constitute an excellent vessel for holding water. It used to be considered that disease could be cured by bleeding people, but this can hardly be held to have suggested the idea of giving them blood transfusions.

Appellant's unorthodox use of coaxiality for *preventing* movement was exactly opposite from the purposes for which it had been used as a common expedient. Regarding the solution of the problem that was presented in six wheel trucks, this Honorable Court said (177 F. 2d 153, 161):

“Knox, in solving it, deviated from the entire prior art. *He was an innovator, not a follower.*” (The court's own emphasis.)

In view of the nature of the previous uses of coaxiality “for hundreds of years,” as Judge Harrison put it, it is clear that appellant deviated from the entire prior art in a more marked degree than did Knox, and that Leishman also was an innovator, not a follower.

VII.

The Success of Coaxial Tappet and Rocker Tuners Was Not Due to the Development Work of the Crosley Corporation, as Appellee Contends, Because Plungers Were Old in the Art and the Crosley Corporation Was Admittedly Unable to Produce a Satisfactory Plunger-operated Tuner Until It Adopted the Coaxial Tappet and Rocker Construction Developed by Leishman. All Credit for the Success of These Tuners Must Therefore Go to the Coaxial Tappet and Rocker Construction.

It is absurd to contend, as appellee does, that the success which has attended the coaxial tappet and rocker tuners manufactured by General Motors and others is due to the development work of Crosley. What part of this combination was new? Certainly not the plunger. What part was developed by Crosley? Certainly neither the plunger nor the coaxial tappet and rocker. Plungers had been used to move tappets ever since the days of Kettell in 1883. (See Opening Brief p. 14 *et seq.*) A plunger moved the tappet in Fig. 10 of the Woodbridge patent granted in 1897. (Insert at the back of Appellant's Opening Brief.) A plunger moved the tappet of the tuner in Fig. 1 of the Danish patent No. 52,047, granted in 1936. (Opening Brief p. 112.) Plungers were also used to operate the tuners of Marvin 1,704,754 [No. 3 in the Book of Patents introduced as Defendant's Exhibit A with Defendant's Motion for Summary Judgment], Bast [R. 1142], Faas [R. 1145] and Morin [R. 1172].

According to the testimony of Mr. Kilgour, the plunger or push button was what Crosley *started with* [R. 504], and the research was to determine what would be operated by the plunger. They worked all summer and in

the fall were about to go into production on the tuner with which they had been experimenting [R. 504], "*but it seemed to be a rather difficult one to work out practically.*" They then switched over to the coaxial tappet and rocker construction [R. 504], which everyone knows *did* work out practically. But did the Crosley Corporation actually develop this? The Crosley Corporation does not even claim to have had any idea of such a mechanism before October, 1937.⁵ Leishman's parent application disclosing this construction was applied for in December, 1934—three years earlier than this, as shown in the heading of the

⁵This was the month that the Crosley Corporation, seeking an answer to their difficulties, asked the law firm of Allen and Allen to investigate Mr. Leishman's patent No. 2,084,851. This is stated in black and white in the letter of Allen and Allen to Leishman, which appears as Defendant's Exhibit AA on page 1063 of the present record. The file wrapper of that patent included the specifications and drawings of the patent here at issue. This file wrapper is in evidence as Exhibit O, and the drawings will be found on page 888 of the present record. No one in the Crosley organization ever denied having this information right before them when they switched over to the coaxial tappet and rocker construction. When Mr. Leishman accused them of this piracy in the trial of the *Associated* case which Crosley defended, Mr. Kilgour, who was in charge of research at the Crosley Corporation, was right in the courtroom. But did Mr. Lyon put him on the stand to tell what he knew about it? No. The Kilgour testimony has all been incorporated as a part of the present record by stipulation of both parties hereto, but it contains not a word about this. Instead of putting Mr. Kilgour on the stand to deny Mr. Leishman's accusations, Mr. Lyon called his associate counsel, Mr. Yungblut, to rebut Mr. Leishman's accusation. He testified:

"* * * we had no file history of patent No. 2,084,851 until March, 1938." [R. 525.]

"Q. Have you any information that any member of your firm or any representative of the defendant in this case ob-

reissue patent [R. 777] and in the file wrapper of the parent application on page 844 of the present record. The drawings appear in this 1934 application at page 888 of the present record, and the portion that was carved out to form the specification of the divisional application on the coaxial tappet and rocker construction is shown on pages 863 to 865.

Neither appellee, nor Crosley, nor anyone else has denied that Leishman is the originator of the coaxial tappet

tained any information from the files at Washington? A. No, they did not.

Q. Do you have any reason to believe that they did? A. No. In fact, I know they did not." [R. 526.]

In the absence of some explanation for the long delay, it is not plausible that Mr. Yungblut's firm would not have a copy of the file history of this patent until March, 1938, when his valuable client, the Crosley Corporation, asked him to investigate the patent in October, 1937.

His testimony as to what anyone did at the Crosley plant is, of course, only hearsay. The one man who was in a position to give competent testimony as to what went on at the Crosley plant was Mr. Kilgour. The real significance of Mr. Lyon's failure to ask Kilgour to testify on this point, and his substitution of his associate counsel, is evident from the following expression of the Supreme Court in *Kirby et al. v. Tallmadge*, 160 U. S. 379, 383, 40 L. Ed. 463, 465:

" . . . It would certainly have been much more satisfactory if the defendants, who must have been acquainted with all the facts and circumstances attending this somewhat singular transaction, had gone upon the stand and given their version of the facts. *McDonough v. O'Neil*, 113 Mass. 92; *Com. v. Webster*, 5 Cush. 295, 316, 52 Am. Dec. 711. It is said by Mr. Starkie, in his work on Evidence (vol. 1, p. 54): 'The conduct of the party in omitting to produce that evidence in elucidation of the subject-matter in dispute, which is within his power and which rests peculiarly within his own knowledge, frequently affords occasion for presumptions against him, since it raises strong suspicion that such evidence, if adduced, would operate to his prejudice.' "

and rocker construction. To say that the success of the coaxial tappet and rocker tuners is due to work done by Crosley is thus not in accord with the facts. The plunger that moved the tappet was very old, and the only departure from the prior art was the coaxial tappet and rocker construction that was developed by appellant. All credit for the commercial success of these tuners must therefore go to the developer of the coaxial tappet and rocker construction, and that person was Leishman.

Appellee claims that the Schaefer tuner, originally operated by a lever, was a success (p. 33 of Brief for Appellee), using the number of tuners in which the Schaefer mechanism was operated *by a plunger* as the measure of this success; but when appellant, in measuring the success of his coaxial tappet and rocker combination, includes those that were *plunger-operated*, appellee claims that this is improper. Even if we measure the success of the coaxial tappet and rocker combination solely by comparing the various plunger-operated tuners used by General Motors, we find that by far the greater success went to those containing coaxial tappets and rockers, for appellee abandoned the Schaefer-General Motors rack tuner in favor of the coaxial tappet and rocker construction, of which more than one million were manufactured prior to the trial. Appellee could have used the rack construction without having to consider appellant's patent, but General Motors' preference for appellant's construction was so great that it brought this law suit in order to secure permission to use it without paying Leishman anything for the privilege.

VIII.

Appellee's Attempts to Belittle Appellant's Combination in Its Brief and at the Trial, Comes With Poor Grace From a Corporation That Has Abandoned Its Own Structure and Used That of Appellant in More Than a Million Tuners.

Although appellee has abandoned all other tuners and admittedly used appellant's coaxial rocker and tappet combination in more than a million radio receivers prior to the trial, appellee's brief nevertheless says (p. 35) that "simple inspection" of *appellee's* purported model of this construction "makes it evident that this so-called invention is indeed but a poor answer to the problem, if one existed, posed by Marschalk." Yet this greatest of all corporate giants filed this law suit in an attempt to secure the court's permission to continue to use this "poor answer" in a few more million radio receivers. Appellee's anomolous position is evident from the following decisions:

"* * * It has been held in adjudications without number, that one who appropriates the teachings of a patent may not deny the utility of the invention. This is, of course, both reasonable and logical."

United States Gypsum Co. v. Consolidated Expanded Metal Companies (C. C. A. 6), 130 F. 2d 888, 889.

This Honorable Court expressed the same well-known doctrine in *Dunkley Co. v. Central California Canneries et al.*, 7 F. 2d 972, 976, 977:

"On the other hand, the defendants, having used machines which embody plaintiff's patent, cannot be heard to dispute the utility of the patent. *Lehnbeuter v. Holthaus*, 105 U. S. 94, 96, 97, 26 L. Ed. 939; *International Tooth Co. v. Hanks Association* (C. C.)

111 F. 920, 921; same case affirmed, 122 F. 74, 58 C. C. A. 180; *Cummer & Son Co. v. Atlas Co.*, 193 F. 993, 997, 113 C. C. A. 611; *Boyce v. Stewart*, 220 F. 118, 126, 136 C. C. A. 72."

Appellee nevertheless went to considerable lengths to build a spurious model purporting to show appellant's construction. [Pltf. Ex. 5.] Regarding this model, with built-in defects of appellee's design, appellee's brief (p. 35) says:

"Neither rocker [after the tappet had been set] returned to its proper position, and Schwarz explains that such failure was due to the high step-up in the structure and to its ineffective lock-up design, and that the mechanism would not be commercially satisfactory."

The failure of the rocker to return to its proper position was due to the hard turning condensers deliberately used by appellee and to changes which appellee made in the lock-up design in order to make the lock slip. No such difficulties arose with the model constructed by appellant. [Defts. Ex. M.]

When appellee's model [Pltfs. Ex. 5] was first introduced, Mr. Flam made many objections to it because it was "almost impossible, without the use of a great deal of force," to move the rockers and tappets [R. 356]; and after Mr. Schwarz finally admitted that there was binding in the shafts, Mr. Flam's renewed objections were sustained [R. 362] and Mr. Lyon secured the court's permission to let Mr. Schwarz take the model away to "loosen it up some." The model was returned to court the next day in a somewhat improved but still unsatisfactory form.

In disclosing his novel contributions to the field of automatic tuning, there was no necessity for Leishman in his patent to describe any particular kind of means for locking the tappets in adjusted position. The kind of lock is immaterial. A locking means could have been indicated diagrammatically, or it could have been omitted entirely. Suitable locks were already well known in the art, and the Supreme Court long ago held that “. . . That which is common and well known is as if it were written out in the patent and delineated in the drawings.”

Carnegie Steel Co. v. Cambria Iron Co., 185 U. S. 403, at 437.

But in building a model of defendant's tuner, plaintiff not only made no use of “that which is common and well known” but deliberately departed from the disclosure in the patent in order to misrepresent defendant's invention. Appellant's model [Defts. Ex. M] shows that the lock illustrated in the patent is adequate to hold the tappet; but if it were not so, any worker in the art would be expected to make use of “that which is common and well known.” The end of the clamp illustrated in dotted lines in the patent is formed like the letter V, but instead of using a V-lock on its model of appellant's tuner, appellee used one that is circular or arcuate in shape so that it would slip.

But General Motors pays the patent the tribute of imitation, and Mr. Schwarz inadvertently admitted the great value of constructing the tappet and rocker so that their axes are coaxial, although he was apparently trying to damn the construction by faint praise. He said [R. 349-350]:

“A. Coaxiality is a good design feature, but not one of major importance. We feel that there are

many other items of the tuner design that might swamp out the improvement which might be gained by the coaxiality. For example, the fit of the bearings, or a burr on the tappet, or a bent tappet would overcome any good that might be gotten from coaxiality. In other words, coaxiality is a good feature, but it is not the only feature which must be considered in the design of a tuner to be accurate enough."

It should be quite obvious in any device that no improvement can be sufficiently great to become "the only feature which must be considered"; nor can any improvement be great enough to avoid being "swamped out" by mechanical difficulties elsewhere. It requires no stretch of the imagination to realize that any automatic tuner could be rendered entirely inoperable by "the fit of the bearings, or a burr on the tappet, or a bent tappet." A bent tappet in an automatic tuner is as serious as a broken crank shaft in an automobile. A statement that it takes difficulties of such magnitude to "swamp out" the advantages of appellant's coaxial relationship between the tappet and rocker, is a rather significant admission from a witness who is trying to minimize the importance of appellant's contribution.

But General Motors' major concession to the importance of appellant's combination is its own abandonment of other tuners, including the one designed by Schwarz and the other General Motors engineers [Pltfs. Ex. 3], and General Motors subsequent use of more than a million tuners embodying the coaxial rocker and tappet construction. And the Court should not lose sight of the fact that General Motors went to the expense of filing this Declaratory Judgment suit and fighting it through the courts rather than give up the advantages of appellant's contribution.

Of equal if not greater significance is what happened in connection with the Zenith Corporation. Zenith has been a major factor in automatic tuning ever since it filed the Heath patent in 1924. [R. 800.] Zenith engineers developed the Zenith-Schaefer tuner in which creeping was avoided by interposing ten movable parts with eight guides between the tappet and rotatable member. But it abandoned this. With the advent of appellant's coaxial tappet-and-rocker construction, Zenith returned to automatic tuners—in fact, Defendant's Exhibit FF is a Leishman tuner manufactured especially for Zenith by appellant's licensee. [R. 225-226.] Zenith later tried still other tuners; but in May, 1948, Zenith returned to the coaxial tappet-and-rocker construction [Defts. Ex. GGG] with the announcement that "This system is so simple and fool proof, that complete replacement should seldom, if ever, be necessary." [R. 1140.]

The engineers of the Crosley Corporation worked from the spring of 1937 until October, 1937, in the development of a tuner of their own [R. 504] "but it seemed to be a rather difficult one to work out practically," so they switched over to the coaxial tappet and rocker construction. [R. 504.] This Honorable Court is well aware through the *Associated* case that Crosley, like General Motors, defended a law suit rather than give up this feature.

This Court is also aware through the *Radio Condenser and General Instrument* case that the tuners made by these concerns were also of the coaxial tappet and rocker construction. The decision in the government's suit against these tuner manufacturers shows (87 Fed. Supp. 157, 180, 182) that they authorized their jointly owned Condenser Development Company on June 9, 1939 (p. 180) to

respond to a charge of "alleged infringement of any Letters Patent in the field of radio tuning devices" by taking appropriate "affirmative action" such as "the devising of structures in avoidance of infringement thereof" (p. 182). The complaint in the Declaratory Judgment suit which these concerns brought against Leishman shows on page 5 of the printed record in this Court's possession (No. 11652) that they were aware of Leishman's charges of infringement in 1938. Yet as late as 1945, the date of the complaint, neither these concerns nor the Condenser Development Company had been able to develop a satisfactory tuner that would obviate the use of Leishman's construction, so they filed a Declaratory Judgment suit against him to secure the court's permission to continue its use over Leishman's objections.

This history shows the importance of appellant's contribution far too convincingly for appellee to belittle it successfully.

IX.

Appellee's Contention That Appellant's Brief Has Pointed to No Evidence of Invention Ignores the Detailed Exposition of Such Evidence in the Opening Brief.

Alleging that the indicia of invention present in the *Sir Wheel* case is missing here, appellee's brief asserts (p. 29): "The evidence in this case shows no long-felt want, no record of unsuccessful efforts by others preceding appellant, and no superseding by appellant's tuner of that which had gone before, indeed no use whatsoever of appellant's tuner." In the same vein, appellee's brief alleges (p. 34) that "the record establishes that rather than showing wide experimentation demonstrating a need for

his asserted solution the experimentation inferred from the evidence was not directed to the narrow problem allegedly posed by the Marschalk structure, which problem could not have been present prior to 1937, but rather, concerned entirely different type tuners. No evidence whatsoever establishes either that the art prior to appellant needed his alleged invention, that any problem existed requiring his alleged invention, or that anyone preceding appellant engaged in any unsuccessful attempts to reach the alleged invention."

It was thoroughly demonstrated in Appellant's Opening Brief in a well-documented exposition of the facts, that the indicia of invention prescribed in the *Six Wheel* case is present here in far greater degree than it was in that case. This was all set forth on pages 79 to 87 of the Opening Brief, to which the Court is respectfully referred.

It was shown on page 3 of the Opening Brief that some of the largest corporations in the country had been seeking for a satisfactory automatic tuner ever since 1924. But appellee contends that the experimentation "was not directed to the narrow problem allegedly posed by the Marschalk structure." It has been abundantly shown in appellant's discussions of the Marschalk tuner in this and the opening brief, that the problems of adjustable tappet tuners did not originate with Marschalk but confronted every experimenter who undertook to position a rotatable member by an adjustable tappet. The fact that others tried to obtain results by more complicated devices and by still other principles is strong evidence that he who succeeds by simpler means in producing a satisfactory article has done something that rises above mechanical skill. The law on this point is too well covered in the opening brief to need repetition here.

A few simple questions about the instant challenger of the patent may serve to bring the pertinent facts to a focus. If the answers to the problems of adjustable tappet tuners are all found in Schaefer, why didn't General Motors continue to use its own plunger-operated version of the Schaefer device instead of filing this law suit? If appellant has done nothing that Schwarz was not taught to do in school, why didn't Schwarz and his fellow-engineers produce appellant's simple device when they were endeavoring to simplify the Schaefer mechanism? If Marschalk teaches everything that Schaefer did not know, why did Marschalk, who must have known of the widely used Zenith-Schaefer tuner, leave the bugs in his own device? If appellee's simple solution was obvious all the time to any skilled worker in the art, why did Schwarz tolerate two extra parts for every button in the General Motors rack tuner?

X.

The Evidence and the Pertinent Law Show That the Reissue Patent Is for the Same Invention as the Original and That the Invention Intended to Have Been Covered by the Original Patent Included the Coaxial Relationship.

Appellee's brief attacks the validity of the reissue patent on two grounds: (1) That the reissue is not for the same invention as the original unless it includes levers, and (2) that the reissue is not for the same invention as the original because the reissue includes claims directed to the coaxial relationship between the tappet and rocker.

The first of these two grounds, having to do with whether the reissue claims must be confined to lever-operated devices, will be discussed under the subject of infringement.

With respect to its second ground for asserting that the reissue is not for the same invention as the original, appellee makes the statement in the very first paragraph directed to this defense that “no vestige of intent appears upon the face of the original patent to cover or secure coaxiality as appellant’s invention.” (Brief for Appellee, p. 58.)⁶

⁶After improperly referring to the Crosley tuner as an independent development, plaintiff’s brief on page 59, says: “although he now denies it, he admitted in the *Associated* case that he modified the claims of his original patent in the reissue so that they would cover the Crosley tuner [R. 300-302] and, in so doing, claimed coaxiality.” A careful reading of the pages referred to reveals that there is no conflicting denial and admission such as appellee alleges. The actual reasons for the reissue are set forth in appellant’s oath at the time the reissue was applied for [R. 763]. This written document is in full harmony with appellant’s testimony in the instant case as well as that in the *Associated* case, which appellee’s counsel read into the present record in the pages referred to.

The question to which appellant answered “no” in the trial in the instant case was not the same question as that to which he answered “yes” in the *Associated* case. Appellee’s counsel in the instant case asked Mr. Leishman [R. 301]: “Was one of your purposes in applying for the reissue patent in suit to so modify the language of the claims of your original patent that you could eliminate the question of non-infringement which was asserted by Allen & Allen at the meeting I have just referred to?” Mr. Leishman’s answer to this question was “no.” That this was the correct answer to this question is immediately apparent upon examining the language of the claims of the original patent as they reappeared in the reissue. Not one single word was altered.

The significance of Mr. Leishman’s testimony on this point in the *Associated* case, which Mr. Lyon read into the present record, is fully discussed in the appendix hereto, pp. 4 to 6.

That the Crosley tuner was not independently developed, as appellee’s brief alleges, was thoroughly demonstrated on pages 36 to 39 of this brief, and Crosley did not use this structure until after the corporation wrote the law firm of Allen & Allen [Deft. Ex. AA, R. 1063] asking it to investigate Leishman’s patent No. 2,084,851, the file wrapper of which contains the original disclosure of this construction. Crosley Corporation learned of this ’851 patent when Mr. Leishman made a second trip to the Crosley plant upon invitation of the chief engineer [R. 210-212] during the time that the corporation was trying to develop a satisfactory tuner of its own.

Appellee's misuse of the word "vestige" leaves appellee's exact meaning uncertain. It appears that appellee is alleging that no indication of such intent appears in the original patent. It is true that appellant never intended to claim coaxiality as his invention. Furthermore, he has never at any time made an attempt to do so. Appellee's statement to this effect is typical of appellee's many attempts to confuse the issue. Coaxiality has been used for many purposes in the past, but for none that was remotely analogous to appellant's novel use of this relationship. The claims in which a coaxial relationship is mentioned define specific elements and the relationship between the axes of these specific elements in the fully engaged position, and there has been no attempt to "secure coaxiality as appellant's invention," as appellee puts it. Claim 8, for example, says [R. 779, column 1, lines 16-19]: "The axis of said means [the tappet] being substantially coaxial with the axis of said rocker when said means is in engagement with both of said arms" [the arms of the rocker]. To assert that appellant is trying to claim coaxiality, is on a par with the situation that would have prevailed if the appellant in *Pointer v. Six Wheel Corp.*, 177 F. 2d 153, 160, had told this Honorable Court that Knox was trying to claim the universal joint as his invention. Knox used a universal joint for a specific purpose that was novel, and this Court held that ". . . invention cannot be defeated merely by showing that, in one form or another, each element was known or used before." (Citing many decisions.)

Appellee would have this Court believe that no reissue is valid unless its claims are identical to those of the original patent, or that intention to claim every subcombination must be individually set forth in the specification. Actually, appellant has never seen a patent in which it

was specifically stated that the patentee intended to patent this or that feature. The accepted procedure is merely to state the objects and then to describe a structure that achieves all the objects.

It is fundamental that every reissue must be for the same invention intended to have been covered by the original patent. The law is well settled on that point. The whole question is, what have the courts considered sufficient evidence of intention to claim? The Supreme Court long ago stated and later reaffirmed that a patentee may include in his reissue claims whatever was "substantially indicated in the specification or drawings which properly belonged to the invention as actually made and perfected." This statement was originally made by the Supreme Court in *Seymour v. Osborne*, 11 Wall. (78 U. S.) 516, 20 L. Ed. 33, which the Supreme Court cited with approval in its recent decision in *Graver Tank and Mfg. Co. v. Linde Air Products Co.*, 70 S. Ct. 854, 856. In *Parker and Whipple Co. v. Yale Clock Co.*, 123 U. S. 87, 97, 98, 31 L. Ed. 100, the Supreme Court quoted from its *Seymour v. Osborne* decision as follows:

"* * * Power is unquestionably conferred upon the commissioner to allow the specification to be amended if the patent is inoperative or invalid, and in that event to issue the patent in proper form; and he may, doubtless, under that authority, allow the patentee to redescribe his invention and to include in the description *and claims* of the patent not only what was well described before, but *whatever else was suggested or substantially indicated in the specification or drawings which properly belonged to the invention as actually made and perfected.*" (Emphasis added.)

There surely can be no question in anyone's mind that the coaxial relationship between the tappet and the rocker "properly belongs to the invention as actually made and perfected," to use the Supreme Court's language. There never has been any exception to the rule that any novel structure shown in the drawings and mentioned in the specifications is a part of the original invention if such structure was a part of the invention as originally made.

Following the doctrine long ago established by the Supreme Court in *Seymour v. Osborne* and reaffirmed in the *Parker v. Yale* case, the Court of Appeals for the Fourth Circuit recently said:

"It is argued that the reissue patent is for a different invention from that covered by the original patent and hence invalid, the contention being that the claim of the original patent covered a tobacco curing barn without reference to the device for bringing air from the outside over the open flame burners and under the hood, which is the heart of the combination covered by the reissue patent. The answer is that while the claims of the original patent broadly covered a tobacco curing barn and did not specifically mention the matter which made the combination patentable, *this was fully covered by the specification.*" (Emphasis added.) (*Florence-Mayo Nurway Co. v. Hardy, et al.*, 168 F. 2d 778, 782.)

There is certainly no question that the coaxial relationship between the tappet and rocker "was fully covered by the specification," to use the exact words of the Florence-Mayo decision. Moreover, the coaxial relationship was shown in the drawings.

Appellee tries to beg the question by saying (p. 58) that appellant "alluded briefly in his description to the

fact that the axes of the two tappets and two rockers therein described were coaxial and made no mention in the claims of coaxiality.” The description of this feature of the invention is complete and thoroughly adequate and cannot be criticized on the ground that it is succinct. Whether any mention was made in the *claims* of the original patent as to this feature, is clearly immaterial according to the rule laid down by the Supreme Court in *Seymour v. Osborne*, reaffirmed in *Parker v. Yale*, and followed in the very recent *Florence-Mayo* case. In the *Florence-Mayo* case the decision states that the claims “did not specifically mention the matter,” but that the feature described in the reissue claims “was fully covered by the original specification.”

Although the inclusion of the coaxial relationship in the drawings and the description of it in the specification makes it entirely immaterial whether it was mentioned in the claims, appellee’s expert Mackeown disagrees with the present statement of appellee’s counsel and found language in the original claims which he *definitely* related to the coaxial relationship. In the affidavit of Dr. Mackeown, a part of which appears on pages 27 to 29 of the present record, Dr. Mackeown said at page 27:

“* * * In order to obtain coaxiality in the tuner of the reissue patent, because such tuner is operated by a lever, *it is necessary that the distance between the pin 60 and the pivot Q shall be equal to the distance between the pivot Q and the axis of the shafts 49 and S.* Moreover, the tappet 61 must be so shaped that, when the lever F is pushed home, the axis of the tappet will line up in a vertical direction with the axis of the rocker 48.” (Emphasis added.)

The first requirement which Dr. Mackeown here tells us is necessary to secure coaxiality in the device shown in the patent, is set forth in both claims 1 and 2 of the original patent where the precise relationship specified by Dr. Mackeown is described. In referring to the tappets and the position of their pivot 60 with relation to the pivot or fulcrum Q of the lever, both claims 1 and 2 say:

“ . . . a plurality of adjustable members pivoted to said lever at a point (the pin 60) substantially as far from the fulcrum of said lever (the pivot Q) as said axis (of the shafts 49 and S) is from said fulcrum (the pivot Q).” (Parenthetical references are to Dr. Mackeown’s language.)

Both claims 1 and 2 of the original patent thus describe the specific structure that Dr. Mackeown says “is necessary” “in order to obtain coaxiality” when a lever is used. Although, as before mentioned, the inclusion of the coaxial relationship in the original drawings and specification makes it immaterial whether the original claims embodied language directed to this feature, the above mentioned recitation in claims 1 and 2, the purpose of which is recognized by Dr. Mackeown, shows conclusively by the claims themselves that defendant was trying to claim the coaxial relationship in the original patent.

Aside from illustrating a coaxial relationship in the drawings and describing it in the specification of the original patent, which according to the Supreme Court is sufficient to support a reissue where the structure is a part of the device, there is yet another thing in the original patent that by itself constitutes definite proof of appellant’s intention to include the coaxial relationship of the tappet and rocker in his claims.

As this court has previously been apprised, the original patent resulted from a division of a parent application that was filed on December 15, 1934. The file wrapper of this parent application is present in the record as Defendant's Exhibit "O." Figs. 1, 2 and 3 of the original and reissue patents were originally Figs. 14, 15 and 16 of the parent application. These figures appear therein on page 888. The descriptive portion of the reissue patent will be found on pages 863 to 865, inclusive. While the identical drawings of the original patent thus appeared in the *parent* application, there was no verbal description of the coaxial relationship, but it has long been the custom of the Patent Office to require that anything covered by the claims must be both shown in the drawings and described in the specification. Inasmuch as the appellant desired to claim the coaxial relationship of the tappet and rocker, it was consequently necessary that this feature be specifically mentioned in the specification. In order to comply with this Patent Office requirement, a description of the coaxial relationship shown in the drawings was inserted when filing the divisional application that resulted in the original patent. This description appears in the file wrapper of *original* patent, No. 2,108,538 [Defendant's Exhibit "P"] at the middle of page 1008. The paragraphs above and below this description will be found in the file wrapper of the parent application [Defendant's Exhibit "O"] at the bottom of page 864, but it will be noted that the paragraph describing the coaxial relationship is missing.

The paragraph describing the coaxial relationship appears in the issued original patent *verbatim* on page 2 of the patent [R. 772, col. 1, beginning at line 30]. The specific insertion of this paragraph in the specification,

notwithstanding the fact that the coaxial relationship is adequately illustrated in the drawings, affords conclusive proof that appellant intended to claim this feature.

Another definite proof that Leishman intended to claim the coaxial relationship, is contained in the objects set forth in the second paragraph of the original patent. It is axiomatic that a patentee intends to claim the structure for achieving the objects which he enumerates. Everyone who is familiar with this patent suit knows that the purpose of the coaxial relationship between the tappet and the rocker is to make the apparatus *easy to adjust*, and the specification of the original patent states in black and white that one of the patentee's objects is "to afford means whereby the apparatus *may easily be adjusted* so that a definite manual operation will cause the desired rotatable element to be turned to a desired position." (Emphasis added.) [R. 771, col. 1, lines 30-33.]

The coaxial relationship was thus shown in the drawings of the original patent and described in the specification of the original patent, and the object which this relationship achieves was included in the objects of the original patent. Moreover, according to appellee's own expert, Dr. Mackeown, claims 1 and 2 of the original patent recite structure necessary to achieve the coaxial relationship, thus showing an actual attempt to claim this structural relation between the tappet and rocker.

According to the Supreme Court doctrine initially enunciated in *Seymour v. Osborne* and reaffirmed in *Parker & Whipple v. Yale*, it is enough to support a reissue if the structure claimed therein "properly belonged to the invention as actually made and perfected."

Appellee's argument that the reissued claims including the coaxial relationship are not for the same invention as the original patent are thus totally without merit.

XI.

The Doctrine of Equivalents as Reaffirmed by the Supreme Court in the Graver Case Shows Appellee's Plungers to Be Equivalents of the Operating Levers of the Patent, and the Clear Language of the Reissue Statute Requires That This Doctrine Be Applied to Reissue Claims in the Same Manner as to Original Claims.

Regarding the subject of infringement, appellee's brief contains not one word to support the proposition that the plunger in appellee's tuners is not the full mechanical equivalent of the lever shown in the patent. Appellee's argument in support of its contention of non-infringement is based solely upon this Honorable Court's decision in the *Associated* case. Regarding the present evidence as to the equivalence of plungers and levers that was not before this Court in the *Associated* case, appellee has nothing whatever to say by way of refutation, but contends rather that it is not new evidence. In the last analysis, appellee's claim of non-infringement thus rests solely upon this Honorable Court's decision in the *Associated* case.

Appellant is, of course, fully aware of this Honorable Court's holdings in that decision, but appellant has abundantly shown in the Opening Brief that appellee's plunger is the equivalent of the lever shown in the patent; appellant has shown, moreover, that a patentee is entitled in a reissue patent to claims that are broad enough to include the mechanical equivalents of the elements of the originally patented combination. The doctrine on this subject was quoted from Walker on Patents (page 118 of the Opening Brief), and the application of this doctrine to the specific facts of the present case is nowhere disputed in appellee's brief.

That a patentee has a right to reissue claims broad enough to include equivalents of the elements of his original combination, is a necessary corollary of the specific language of the reissue statute which says (Sec. 4916):

“* * * Every patent so reissued, together with the corrected specifications, shall have the same effect and operation in law, on the trial of all actions for causes thereafter arising, as if the same had been originally filed in such corrected form * * *”

Certainly no one disputes that appellee would be entitled to claims broad enough to include equivalents if such claims had been filed *originally*.⁷ According to the statute,

⁷In this connection this Honorable Court may wish to take judicial notice of the fact that the Canadian Patent Office has allowed the identical claims here at issue in *an original patent*. Appellant is filing herewith as Appellant's Exhibit BBBB a certified copy of the allowed Canadian application on the tuner here involved. It will be noted that the drawings are absolutely identical to the drawings of the instant reissue and to the original thereof, and that the specification is verbatim the same, excepting for the first and next to the last paragraph, as the specification of these two United States patents. In allowing the same claims here at issue, the Canadian Patent Office thus agreed with the United States Patent Office that the reissue claims are for the same invention as the original.

The first paragraph of the Canadian application reads:

“This application is a division of my application Serial No. 442,750, filed June 21, 1937, and issuing on December 25, 1945.”

The next to the last paragraph of this Canadian application as allowed included this statement:

“ . . . obviously the tappet and rocker will operate in the same way if the tappet is mounted on any other kind of operating means whatsoever, so long as such operating means transmits motion to the tappet and guides it into contact with the rocker. It will thus be clear that the tappet may be mounted upon a rectilinearly movable member, or plunger, without departing from the invention hereinbefore set forth.”

This statement was not challenged by the Canadian Patent Office, nor could it have been, because plungers and levers are probably the best known of all mechanical equivalents. In order to facilitate the verification that the said Canadian claims are the same as those here at issue, they are reprinted in the appendix hereto, pp. 6 to 10, where other pertinent information is given.

then, appellant cannot be deprived of the benefit of the doctrine of equivalents because the claims here involved are *reissue* claims. The right to equivalents is reaffirmed in no uncertain terms in the Supreme Court's recent decision in *Graver Tank Mfg. Co. v. Linde Air Products Co.*, 333 U. S. 271. There can thus be no doubt that infringement cannot be avoided by the substitution of a plunger for the levers shown in the patent, nor can it be said that the reissue claims are not for the same invention as the original patent unless they include levers. When an equivalent is substituted, the invention is still the same.

There is thus only one issue with respect to plungers and levers, and that issue is: Is the plunger of plaintiff's tuners the equivalent of a lever for moving the tappet?

According to the old doctrine of *Seymour v. Osborne* and *Imheuser v. Burke*, reaffirmed by the Supreme Court in its *Graver* decision, a plunger is the equivalent of a lever for operating automatic tuners or for moving tappets if it was known as a substitute for this purpose before the issuance of appellant's patents. Appellant's Opening Brief (pp. 112-113) showed that the earlier Danish patent No. 52,047 [R. 829] and Peck's U. S. Patent No. 1,865,704 [R. 1149] both taught the alternative use of plungers and levers for operating automatic tuners. The early patents to Faas [R. 1145], Bast [R. 1143], Morin [R. 1172] and Marvin [No. 3 in Defendant's Exhibit "A" with Motion for Summary Judgment] all show the use of plungers for operating automatic tuners. The use of plungers for moving tappets was taught in the very old patents to Kettell and Woodbridge discussed on pages 111

and 112 of Appellant's Opening Brief and cited as pertinent prior art in appellee's complaint [R. 7]. Plungers and levers are thus mechanical equivalents according to the formula prescribed by the Supreme Court.

Appellee's brief answers all this by saying (p. 56): "Such fact is immaterial here where we are concerned with the question of equivalency in a particular shaft positioning structure." In *any* patent case, the Court is concerned with equivalency in a *particular* structure. But if the immediate purpose of the asserted equivalents in the *particular* structure is no different from, or is analogous to, their purpose in prior art structures, then the asserted equivalents are also equivalents in the *particular* structure at issue. In the cited prior art tuners in which levers and plungers were used alternatively, they were used to transmit motion to the other parts that do the actual work of the combination. That is their use here. In the Kettell and Woodbridge patents cited in appellee's complaint as pertinent prior art, levers and plungers were used alternatively to move tappets. That is their use here.

Appellee has been unable to point to any difference between appellee's plungers and the lever of the patent that has any significance whatever. Appellee's brief says only: "The very fact that appellant in his testimony sought to minimize, that is, the traveling in an arcuate path by levers and in a straight path by plungers, is itself determinative of the issue of equivalency."

This difference between the action of levers and plungers, which is all that appellee has been able to point out, should, as appellee says, "itself be determinative of the issue of equivalency"; but this Honorable Court resolved this exact issue in the *Pointer v. Six Wheel* case by holding that parts characterized by this difference *are* mechanical

equivalents. As shown in Appellant's Opening Brief (pp. 114-115) this Honorable Court in its *Pointer v. Six Wheel* decision held that Pointer's coil springs that move in a straight line like plaintiff's plungers were equivalents of Knox' leaf springs that pivot in an arcuate path like the levers shown in appellant's patent. This was graphically illustrated on the folding insert at the back of the Appendix to Appellant's Opening Brief. The ruling of this Honorable Court on this point was the only logical one that could have been made, and it is controlling here.

In pointing out the difference, which is immaterial, between the action of levers and plungers, appellee's brief of course ignored the portion of Appellant's Opening Brief which showed that the significance of this specific difference had already been decided by this Honorable Court in a way that is unfavorable to appellee.

Appellee does not allege that it makes any difference whatever in the operation of a coaxial rocker and tappet tuner whether the tappet is moved in a straight line by a plunger or in a curved line by a lever. Most plungers move in straight lines like coil springs of the type used in Pointer's structure; and all levers, like the leaf springs of Knox, are pivoted to move in an arc. The distinction that appellee is now trying to grasp is not one that is peculiar to coaxial tappet and rocker tuners. The same difference that characterizes Pointer's coil springs and Knox' leaf springs also characterizes the plungers and levers in all the prior art devices that appellant has cited. But this difference had no significance in the Pointer and Knox structures. It likewise had no significance in any of the prior art tuners, and it in no way affected the coaction of the parts. It also has no significance in coaxial rocker and tappet tuners and it likewise in no way affects the coaction

of the parts. Levers and plungers were used as equivalents in all the prior art devices in which they were shown, and the fact that one moves in an arcuate path and the other in a straight path has no more significance in coaxial rocker and tappet tuners than it had in any of the tuners of the prior art.

In view of this Honorable Court's decision in the *Six Wheel* case and the Supreme Court's opinion in the *Graver* case, it can no longer be held that a plunger is not the equivalent of a lever for moving the tappet in appellant's combination, nor that the reissue claims must include levers in order to be for the same invention as the original. When a mechanical equivalent is substituted for one of the elements of a patented combination, it is still the same invention. The Supreme Court has repeatedly said (as in the reaffirmed *Seymour v. Osborne* and *Imheuser v. Burke* decisions) that one cannot omit an element of a patented combination and substitute a known mechanical equivalent and avoid infringement. If such a substitution changed it into a different invention, the Supreme Court certainly would not have said that infringement cannot be avoided in this manner. There would be no infringement if the accused device did not embody the invention covered by the claims which the device is alleged to infringe. The fact that the Supreme Court says that infringement is still present under such circumstances, shows that it regards the invention as still the same regardless of the substitution of the mechanical equivalent. The substitution of a mechanical equivalent thus does not change a combination into a different invention, and it therefore cannot be said that the reissue claims are not for the same invention unless they include levers. If plungers are mechanical equivalents of levers, the invention is still the same.

Parts That Give Motion to Other Parts May Properly Be Claimed in Terms Broad Enough to Include Other Means for Performing the Same Functions.

Appellant's right to claim the operating member that moves the tappet in broad terms, derives from a long established doctrine which Walker on Patents, Deller's Edition, summarizes as follows:

"Where some of the parts of a combination operate therein to give motion to other parts, which do the final work on the combination, it is proper to specify the former by the use of such terms as 'means,' 'mechanism,' or 'devices' for giving that motion, except when these terms are applied to an element or part which constitutes the essence of the invention." (Sec. 167, p. 795.)

The operating member in appellant's combination operates therein to give motion to the tappet, as this Honorable Court observed in its decision in the *Associated* case. Furthermore, it is the tappet and rocker that do the final work of the combination. It is consequently proper, according to this long established doctrine as explained in Walker, to specify the operating member by such terms as "a manually movable operating means," as in claim 9, or a "manually movable operating member," as in claims 10 and 11.

The foregoing quotation from Walker says that these terms are proper "except when these terms are applied to an element or part which constitutes the essence of the invention." The essence of the instant invention of course lies in the tappet and rocker and the structure having to do with the coaxial relationship of these members when they are completely engaged. Certainly the essence

of appellant's invention is not in the lever shown in his patent as a means for moving the tappet. Both levers and plungers had long been used to operate automatic tuners and even to move tappets. It is consequently proper to refer to the part that moves the tappet, as a "manually movable operating means" or "manually movable operating member."

What is the reason behind the doctrine, expounded in Walker, that broad terms like these may be used for parts of a combination that "operate therein to give motion to other parts, which do the final work of the combination"? The clear reason is that it is immaterial what specific means is used to give motion to these other parts. The decision in *Imhaeuser v. Burke*, 101 U. S. 647, 656, which the Supreme Court reaffirmed in its recent opinion in the *Graver* case, had this to say about elements of a combination that have equivalents in the prior art:

"* * * the patent in respect to each of the respective ingredients comprising the invention covers every other ingredient which, in the same arrangement of the parts, will perform the same function, if it was well known as a proper substitute for the one described in the specification at the date of the patent."

This all applies to reissue patents as well as originals, for the statute, as previously quoted, says: "Every patent so reissued, together with the corrected specifications, shall have the same effect and operation in law, on the trial of all actions for causes thereafter arising, as if the same had been originally filed in such corrected form."

XII.

The Second Tappet Shown in the Patent Is Used Only When a Second Tuning Shaft Is to Be Positioned, and It Is Not an Element of Any of the Claims Here at Issue.

There is a statement in this Honorable Court's opinion in the *Associated* case, which, though the opinion did not say so, may have had a bearing upon the ultimate holding that the plunger of the accused tuner was not the equivalent of the lever shown in the patent. This statement reads as follows:

“* * * The plungers perform a part, and only a part, of the function performed by appellant's levers F and 66.¹⁷ The part so performed is not performed in the same way, or in substantially the same way.”

Footnote 17 says: “Appellant's levers have a double function—that of operating the tappet 61 and that of operating the tappet 62. The latter function is not performed at all in the accused device.”

The Court did not say that it attached any significance to this observation about a double function, the ultimate statement being: “The part so performed is not performed in the same way, or in substantially the same way.” The holding of non-equivalence thus appears to refer solely to how the single function is performed; and the observation in the opinion to the effect that the lever shown in the patent moves two tappets, does not appear to have had anything to do with the holding of non-equivalence. Of course, the absence of a second tappet in the accused device was irrelevant to this matter, because one of the objects, as

set forth in the second paragraph of the patent, is "to make it possible for a single manual operation to tune either a radio set or a television set, or both;" and the claims at issue are *all* directed to a device for tuning only one set, and they therefore include only a single tappet. But the Court may nevertheless have attached an unexpressed significance to its observation, and since appellee tries throughout its brief to make it appear that the patent is directed solely to apparatus for simultaneously positioning *two* shafts, it may be hazardous for appellant merely to assume that this Honorable Court is fully aware of the facts and the pertinent law. The matter will therefore be considered.

It has already been mentioned that one of the stated objects of the invention is "to make it possible for a single manual operation to tune either a radio set or a television set, or both;" and that all the claims at issue are directed to a device for tuning one set only. Inasmuch as this Honorable Court is of course well aware that it is the claims we must deal with in determining whether there is infringement, the Court could have attached no significance to the absence of a second rocker and second tappet in the accused device unless it were somehow under the impression that all parts of the illustrated embodiment must be included in the claims, and that the claims must therefore include two rockers, two tappets, and an operating means for moving two tappets. Appellant does not believe that this Honorable Court could be under this impression, but inasmuch as appellee's brief seems to be encouraging such an interpretation of appellant's device and claims, the pertinent law will nevertheless be discussed.

It is in the claims, of course, that the patentee sets forth the various combinations of parts that he considers to embody his invention. As Judge Learned Hand said in *Claude Neon Lights, Inc. v. El Machlett & Son, et al.*, 36 F. 2d 574 at 575-576:

“ * * It is the claim which singles out from the complex disclosed those elements which constitute the ‘invention,’ and substantially the whole work of the Patent Office lies in determining, not whether the disclosure is new because all of it never is, but whether the claims proposed are. Strictly the disclosure should be used therefore only as the setting of the claims and to find what the words employed really mean.*

* * * * *

“On the one hand, therefore, the claim is not to be taken at its face—however freely construed—but its elements may be treated as examples of a class which may be extended more or less broadly as the disclosure warrants, the prior art permits, and the originality of the discovery makes desirable. On the other, it is not to be ignored as a guide in ascertaining those elements of the disclosure which constitute the ‘invention,’ and without which there could be no patent at all.” (Emphasis added.)

Original claim 5 and all the claims added by the reissue except claim 12, call for only a single rocker and single tappet. Appellant thus claimed a tuner for operating a radio set only, which he had set forth as one of his objects in his original patent. The propriety of such claims is evident from the following paragraph from Walker on Patents, Deller's Edition, Volume 2, Section 266, page 1232:

“A claim may cover the entire process, machine, manufacture, or composition of matter, which is set

forth in the description, or it may cover such parts, or such sub-processes, or such combinations, as are new and useful inventions; and the specification may contain a claim for the whole, and other claims for separate parts, and still other claims for separate sub-processes or combinations. [Citing decisions.] And the subject of a claim needs not to be operative alone. [Decisions.]”

In spite of the clear law on this point, an opponent trying to beg the question might argue that while appellant may have intended that his device could be used for tuning either a radio set or a television set alone, he did not contemplate that the unnecessary parts would be omitted in a tuner intended for the single purpose. That the superfluous parts *were* to be omitted in a single purpose tuner, is thoroughly established by the claims themselves; but if anyone should desire still additional proof, it may be found in the parent application [Defendant's Exhibit "O"] from which the original application was carved.

The parent application described several different tuners devised by appellant, each one of which could be constructed for tuning a single set, or for tuning two different sets simultaneously. In order to simplify the explanation of the first tuner discussed, it is first described in the form used for a single tuning operation. The very first figure, Fig. 1 [R. 883], shows a positionable member A mounted on the control shaft S, and the description [R. 851] says: "If the shaft S is attached to the shaft that controls the tuning apparatus of a radio receiving set, the movement of arm A to a definite position by means of pressing lever L will be the equivalent of turning a cali-

brated dial to a definite setting as is the usual procedure when tuning in a desired broadcasting station.”⁸

Fig. 3 [R. 884] shows the addition of extra parts so that a double tuning operation may be performed, and the specification [R. 852] says: “In Fig. 3, parts bearing the same reference letters are identical to those in Fig. 1. In this figure, however, an additional positioning arm C is introduced, which can be used to tune in a television station while arm A tunes in the accompanying broadcasting station.”⁹

After describing a complete tuner for two tuning operations, the specification says [R. 858]: “In using this automatic tuner for either a radio set or a television set *alone*, *half the positioning arms* and the yoke with its hubs *are eliminated*.”¹⁰ (Emphasis added.)

After describing still another tuner that may be used for two tuning operations, the specification again mentions that the parts for the second purpose may be omitted when only a single set is to be tuned, thus [R. 862]: “* * * However, if the automatic tuner is being used for either a radio set or a television set *alone*, therefore *requiring only one positioning arm per station*, a lug of the type previously described carried by the *single* arm makes it unneces-

⁸The first patent granted on the parent application was patent No. 2,084,851 [R. 982], which issued on June 22, 1937—three days after the divisional application was filed. The wording quoted above from the parent application appears in issued patent No. 2,084,851 at page 986 of the present record, column 1, lines 31-37.

⁹This wording appears in patent No. 2,084,851 at page 986, column 1, lines 50-55.

¹⁰This wording appears in patent No. 2,084,851 at page 987, column 2, lines 18-20. This 1937 patent was a part of the prior art when original patent No. 2,108,538 was granted.

sary to have any sort of projection on either lever. * * *”
(Emphasis added.)

The next tuner described is the one that was made the subject of the divisional application that issued as patent No. 2,108,538—the original of the reissue involved in the present suit. The portion of the specification in this parent file wrapper that was carved out for the specification of the divisional application, begins at the top of page 863 of the record and terminates on page 865. Immediately following the description of the tuner now covered by the reissue patent, the specification says [R. 865]: “As mentioned previously, automatic tuners of *any* of the types described *may be constructed for tuning either a radio set or a television set alone.*” (Emphasis added.) If they are “*constructed*” for one of these purposes *alone*, this clearly means that the parts for the other purpose are omitted, as previously mentioned in the description of the earlier described tuners.

There is thus no room whatever for any misconstruction to be placed upon the statement in the original and reissue patents (second paragraph of each document) that one of the objects is “to make it possible for a single manual operation to tune either a radio set or a television set, or both;”. When constructed as a single purpose tuner, the parts that would be used for an additional tuning operation are of course left out.

Original claim 5 included only a single rocker and tappet, as do reissue claims 7 and 8. Reissue claims 9, 10 and 11 also omit the extra rocker and tappet that would be required for television, but these three claims have added a manual operating means for moving the single tappet.

A patentee's right to claim such parts of his machine as are new and useful inventions, was shown in the quotation from Walker on Patents, Section 266, *supra*. This right was settled by the Supreme Court long ago in *Railroad Company v. Dubois*, 12 Wall. (79 U. S.) 47, 60, 20 L. Ed. 265, 268, where the Court said:

“Undoubtedly a patentee may claim and obtain a patent for an entire combination, or process, and also for such parts of the combination or process as are new and useful, or he may claim and obtain a patent for both.”

(a) **Even if the Original Patent Had Contained No Claim Drawn to a Single Tappet and Rocker, the Law Is to the Effect That Such Claims Would Be Proper in the Reissue.**

Even if the patentee had not specifically mentioned in the objects of his original patent that he intended to provide a tuner for a radio set alone, and even if he had not included a claim in the original drawn to a single tappet and rocker, he would nevertheless have the right to a reissue patent covering the portion of the device that is independently useful for a single tuning operation; in fact, even if there had been an entire *absence* of claims of this sort in the original patent, such absence would alone be sufficient to justify a reissue. Walker on Patents, Deller's Edition, Section 322, page 1366, says:

“Claims are the only operative parts of specifications. If an inventor has produced two or more inventions so allied that they may properly be secured to him in one letters patent, and if he fully describes all of those inventions in the descriptive part of his

specification, but covers only one of them by his claims, then his patent is operative as to one of those inventions, and inoperative as to the others. Inoperativeness of that kind is sufficient to lay the foundation of a right to a reissue. * * *

Appellant has shown in several different independent ways that the device of his reissue patent is not intended only for a double tuning operation, as appellee's brief infers, and that the claims which include only a single rocker and tappet are perfectly proper. The absence of a second tappet in plaintiff's tuners is thus entirely irrelevant to the issue of infringement, nor can the operating member of the accused tuners be distinguished from the operating member shown in the patent on the ground that the latter moves two tappets. When the appellant's combination is constructed for tuning a radio set, the operating member moves only a *single* tappet.

It has also been amply demonstrated in many different ways that appellant is entitled to claims in which the operating member is described in sufficiently broad terms to cover a lever, a plunger, or any other device that will serve the purpose of moving the tappet.

Moreover, the well established doctrine of equivalents applies to reissue patents as well as to original patents, and the statute specifically states that reissue patent claims have exactly the same effect in law as they would have had if filed in the final form in an original patent. Appellee thus cannot avoid infringement by omitting the lever shown in the patent and substituting another member already well known in the art as a proper substitute for a lever in the operation of automatic tuners as well as for the specific purpose of moving tappets.

XIII.

Appellee's Brief Contends That Appellee Should Be Given the Right to Use Appellant's Contribution in Order That "Uniformity of Justice" Might Prevail; but Inadvertent Admissions by Those Opposing the Patent in This and Previous Cases, Reveal Their Private Opinions That Justice Is on Appellant's Side.

The concluding sentence in appellee's brief reads: "Uniformity of justice requires that in the event it becomes necessary to decide the question of infringement in this case this Court hold that the aforesaid plunger type tuners, including those of appellee, do not infringe the patent in suit." But the thing that appellee seeks and misnames *uniformity of justice*, is a ruling from this Honorable Court that plaintiff may appropriate appellant's coaxial tappet-and-rocker combination by omitting the operating lever from the illustrative embodiment shown in the patent and substituting another kind of operating member already well known in the art—a type of expedient specifically prohibited by the Supreme Court. To justify such piracy, appellee has been unable to show that it makes any difference whatever whether the tappet is moved by a lever or by a plunger, contending only (Appellee's Br. p. 57) that "the traveling in an arcuate path by levers and in a straight path by plungers, is itself determinative of the issue of equivalency." But this Honorable Court in the *Six Wheel* case, *supra*, has already held that this difference between members of a combination does not avoid infringement (see pp. 59 and 60 hereof). Moreover, counsel for appellee contend that the General Motors rack tuner is the Zenith rack tuner operated by plungers instead of levers (Appellee's Br. pp. 33 and 57), and they thus inadvertently reveal

that they privately recognize no valid distinction between a plunger-operated tuner and a lever-operated tuner.

The patent attorneys and their experts who have opposed this patent in all the cases in which it has been involved, have likewise recognized that the use of a plunger for operating appellant's combination involves a mere substitution according to the preference of the manufacturer. Engineer Kilgour of the Crosley Corporation testified [R. 486] that Mr. Crosley himself stated before any experimental work had begun at the Crosley plant that he wanted a tuner that would be operated by a push button; and engineer Schwarz of General Motors refers to the G. M. *plunger-operated rack tuner* [Plaintiff's Exhibit 3] as only *a modification* of the *lever-operated Schaefer rack tuner* [R. 388].

The concluding paragraph in appellee's brief says: "Since the decision in the *Associated Case* by this Court in 1943, manufacturers of plunger-type tuners have relied on that decision and have produced and sold plunger type tuners accordingly." This is not true. At the subsequent trial of *The Richards and Conover* case, involving tuners made by Radio Condenser Company, the attorney and expert opposing the patent did not even assert that infringement had been avoided by using a plunger, but openly admitted that this was a simple substitution. The record in that case was filed by appellee herein with Plaintiff's Supplemental Brief, and it was made a part of the record on appeal by stipulation of both parties hereto [R. 684]. In answer to a question of attorney Mueller who was opposing the patent, Dr. Spotts, the expert for The Richards and Conover Company, testified as follows:

"A. If one wished to use a plunger that would give straight line motion as support for the tappet rather

than the pivoted lever which gives motion in the arc of a circle of a rather large radius, draftsmen would have no compunctions about substituting a plunger giving a straight line for the lever, giving an arc of a circle, since the motion is rather small while the tappet is being brought into contact with the rocker. A draftsman would make that substitution in the usual line of his work.

Q. (By the Court): Easy to do. A. Oh, yes.

Q. It would impose no serious problem where a lever is used and you decided you wanted to use a plunger, to change the design to make it work with a plunger? A. A draftsman does those things every day in the week in his usual line of work." (Page 182 of the printed record in *Leishman v. The Richards and Conover Company*.)

The attorneys who were responsible for bringing the declaratory judgment action against the present appellant in *Leishman v. Radio Condenser Company and General Instrument Corporation*,¹¹ likewise knew that it is immaterial by what means the tappet is moved; in fact, plaintiff's very first exhibit *herein* [R. 695] is a letter from Attorney Maxwell James, whose name appeared on the

¹¹The affidavit of Maxwell James, page 66 of the Record in *Leishman v. Radio Condenser Company and General Instrument Corporation*, says: "I am and have been for many years the attorney in patent causes for both of the plaintiffs in this suit." Another attorney who shared the responsibility of bringing that action was A. D. T. Libbey, as will hereinafter appear.

“Brief for Plaintiffs-Appellees” before this Honorable Court, No. 11652, and Mr. James says [R. 695] that the counterweight 39 which Marschalk uses to move his tappet *up* is the equivalent of the spring which appellee uses to raise his tappet. If these very different things are equivalents for moving the tappet *up*, certainly Mr. James recognized that plungers and levers are equivalents for moving the tappet *down*.

Another patent attorney having an official connection with Radio Condenser Company and General Instrument Corporation, specifically contended before the Patent Office that levers and plungers are equivalents for moving tappets in automatic tuners. The decision in the government’s suit against these concerns, 87 Fed. Supp. 157, shows at page 170 that Mr. A. D. T. Libbey was Assistant Secretary of Condenser Development Corporation, a wholly-owned *alter ego* concern which Radio Condenser and General Instrument created and empowered by contract¹² to handle their

¹²The decision shows at page 181 that Condenser Development Corporation was the Second Contracting Party, and on page 182 the decision quotes the following from the 1939 agreement:

“‘As supplemental to clauses 4 and 8 of said agreement of August 7th, 1934, each of the first contracting parties agrees to notify in writing each of the other first contracting parties and the second contracting party of any charge made by others, as soon as such charge is made, of alleged infringement of any Letters Patent in the field of *radio tuning devices* or variable condensers . . . and in the event that the same be decided to be the common concern of the parties hereto, it is agreed that the second contracting party shall thereupon undertake to investigate the infringement charge and to take any affirmative action thereon that the second contracting party may deem advisable to take”

patent litigation. In a Patent Office interference in which Radio Condenser Company, General Instrument Corporation and Condenser Development Corporation were interested, Mr. Libbey filed a paper in the Patent Office contending that the substitution of a plunger for the lever in the tuners of Marschalk or Leishman would be but the substitution of a mechanical equivalent well known in the art. In view of appellee's statements alleging reliance by these manufacturers upon this Honorable Court's decision in the *Associated* case, it is believed that this Court should take judicial notice of the signed statement of Mr. Libbey, so that the Court will know the private opinion of Mr. Libbey as well as that of Mr. James which is already before the Court. A photostatic copy is being filed herewith as Defendant's Exhibit CCCC, and the application of Mr. Libbey's language to the Marschalk and Leishman tuners is shown in the appendix hereto on pages 10 to 12.

Mr. James and Mr. Libbey and the litigants Radio Condenser Company and General Instrument Corporation whom they represented, thus imposed upon this Honorable Court by representing a state of facts exactly opposite from what they knew these facts to be.

The last paragraph of appellee's brief recommends uniformity of justice. The only uniformity that will work justice in this case is for this Honorable Court to render an opinion that will be in conformity with the private opinions of the attorneys and litigants who used this Court in the *Radio Condenser* case to further their adjudged illegal

schemes.¹³ Such a decision by this Court will also conform with the opinions of appellee's counsel and of General Motors engineer Schwarz who show that they recognize no distinction between moving a tappet by a lever and moving a tappet by a plunger when they refer to the General Motors tappet and rack tuner [Plaintiff's Exhibit 3] as a modification of the Schaefer tuner or call it the Schaefer tuner operated by plungers instead of levers.

If this Honorable Court's opinion as to *validity* as well as infringement is to conform with the one that must prevail at the Zenith Corporation and at the Crosley Corporation and at General Motors Corporation, this Honorable Court must hold that appellant's simple combination involved invention. For the Zenith engineers were unable to think of a better solution to the problems of adjustable

¹³The court in *United States v. General Instrument Corporation et al.*, held the contract under which Radio Condenser Company and General Instrument Corporation acted in suing Leishman to be illegal; and the Condenser Development Corporation, which decided upon the course to pursue against Leishman [Gov. Ex. 53], was held to have been formed in violation of the Sherman Act.

Leishman has filed a timely motion under Rule 60(b) to reopen the Ninth Circuit case of *Radio Condenser Company and General Instrument Corporation v. Leishman* on the grounds of newly discovered evidence. This newly discovered evidence showed (1) that these corporations brought the action with unclean hands and were therefore not entitled to a judgment against Leishman; (2) that as to the equivalency of plungers and levers for operating Leishman's combination, the corporations are bound by the statements of James and Libbey; and (3) that appellant's patent actually showed a plunger, the projection 57 on the operating lever being a plunger according to texts discovered since the trial of that case. This motion has not yet been set for hearing.

tappet tuners than to interpose ten movable parts between the tappet and the rotatable member, and after trying other tuners they have finally settled on appellant's coaxial tappet and rocker structure because "This system is so simple and fool proof." And the Crosley engineers worked for nearly a year to provide a satisfactory tuner and were unsuccessful until after Chief Engineer Johnston requested an investigation of appellant's patent No. 2,084,851, the file wrapper of which disclosed the coaxial tappet and rocker construction. And the General Motors engineers, with the Zenith-Schaefer tuner before them, could provide nothing better than their Exhibit 3 tuner with ten extra parts in a five button set. After abandoning that tuner and making more than a million radio receivers embodying appellant's far simpler structure, they want this Honorable Court to give them a clean bill of health.

The appropriation of appellant's invention by these large corporations has gone far enough, and it is the clear duty of this Honorable Court to render a decision in favor of appellant on all issues.

Respectfully submitted,

LEROY J. LEISHMAN,

In Propria Persona.

JOHN FLAM,
Counsel.





APPENDIX.

I.

Re: Testimony From Oklahoma Trial.

The expert witness opposing the patent in The Richards and Conover case was Dr. Spotts, Associate Professor of Machine Design at Northwestern University. He originally advanced the same argument that appellee has appropriated here—that is, that the position of the pivot 55 of Schaefer's tappet bore a coaxial relationship to the rectilinearly movable members 32 and 34 in Schaefer's device. But the proposition that members moving in a straight line can have an axis and that the position of the axis of the tappet 55 has anything to do with the prevention of creeping in Schaefer's mechanism, sounded rather preposterous to the Court; and the Court accordingly questioned Dr. Spotts in order to learn the real truth of the matter. The Court's examination of Dr. Spotts on this subject appears on page 192 of the Oklahoma record and is as follows:

“Q. (By the Court): Can you take that round spot, No. 55 [the pivot of Schaefer's tappet], in that yellow design, and put it any place other than where it is and the thing still work properly? A. *You can move it sidewise.*

Q. Draw pictures of it where it could be. Can you do that? Just take your pencil and draw a lot more of them, a lot of other positions where it could be. A. It could be located, if you have lateral support for members 26 and 27; *then you move this center sidewise without any effect in the operation.*

Q. It could be anywhere on that line? A. *It could be sidewise providing parts did not interfere. Providing that did nothing more than make points 57 and 58 retain contact with the horizontal surface.*

Q. It could be anywhere on that line you have drawn across there? A. I don't mean over here (indicating).

Q. I understand, but a reasonable distance so it would not conflict with any of the other parts. *Now if it is moved a quarter of an inch to the left of your line you say it would still work?* A. Providing there is lateral guidance.

Q. It will still work. *Now if you moved it there would it be coaxial? That is what I want to know.* Just draw one on there and tell me whether it is coaxial or not. *Is that coaxial? You can answer that yes or no.* A. *There is no axis for the body that has up and down motion.*

Q. *Then your answer is yes or no?* A. *The answer is no.*" (Emphasis added.)

Dr. Spotts thus testified that the pivot 55 of Schaefer's tappet could be located in a wide variety of positions "without any effect in the operation" of his device. Furthermore, Dr. Spotts testified that "there is no axis for a body that has up and down motion," as do the members that are engaged by the tappet in Schaefer's device; and he said that there is no coaxiality in the Schaefer mechanism.

II.

**Re: Defendant's Exhibit AAAA Mentioned in
Footnote 1 of the Foregoing Brief.**

Footnote 12 appearing on page 75 hereof shows by excerpts from the opinion in the government's case against Radio Condenser Company and General Instrument Corporation that these concerns empowered Condenser Development Corporation to take affirmative action against anyone alleging "infringement of any letters patent in the field of radio tuning devices." It is this concern that is referred to by the initials C.D.C. in the following extract from Defendant's Exhibit AAAA, which is a certified copy of a letter from Mr. James that constituted one of the exhibits in the government's case against Radio Condenser Company and General Instrument Corporation:

"As supplemental to this last mentioned subject we discussed the arrangements between the members of C.D.C. in the event of threatened litigation based on the possible infringement of patents owned by others, and we showed at some length that through C.D.C., and at C.D.C.'s cost, the members of C.D.C. were kept on the alert as to new patents owned by others and cooperated to build up defenses against such patents if they deemed such patents as not valid, and cooperated to consider the purchase of such patents or being licensed thereunder if they deemed such other patents valuable. *We even explained that in the recent California suit brought by Leishman we even offered to lend assistance, and that we did give some assistance to the defending attorneys against his patent.* We ended this argument by saying that if Winters & Crampton were threatened with any suit, they could come to C.D.C. for the information and assistance that C.D.C. would in such case be gathering and building up pursuant to these provisions in their agree-

ment. They seemed quite satisfied with this thought and Mr. Swanson wondered whether a clause could not be incorporated in the agreement to take care of this. We and some of the others indicated that that would not be necessary since if we were ready to help strangers as we were, we would certainly lend assistance to our own licensee and give them the benefit of any such study or action as we may have made in the matter." (Emphasis added.)

This letter, as will be observed from the exhibit itself, was written on October 25, 1944. The only suit which Leishman prosecuted in California prior to that time was the one against Associated Wholesale Electric Company and it is therefore this suit to which Mr. James makes reference. This letter thus shows that Condenser Development Corporation, acting for Radio Condenser Company and General Instrument Corporation, assisted the defending attorneys in that action.

III.

Re: Reference in Footnote 6 Appearing on Page 48 of the Foregoing Brief.

In footnote 6 on page 48 of the foregoing rebuttal memorandum the statement was made that there was no conflict in Leishman's testimony in this case and in the *Associated* case pertaining to his reasons for obtaining a reissue, and that the question to which he answered "no" was not the same question to which he answered "yes" in the *Associated* case. The question to which he answered "yes" in the *Associated* case was read into the present record on page 302 and was as follows:

"Q. Isn't it a fact, aside from any intention you had of narrowing the new claims that you added by the reissue application, that one of the purposes of

the reissue, one of your purposes, was to so modify the language of this discussion with the Crosley representatives about it of Claim 5 that you could eliminate that question of non-infringement?"

Mr. Leishman replied: "I think I can say yes to that question."

It will be noted that Mr. Lyon in this question asked Mr. Leishman whether his purpose was to modify the language of the discussion with the Crosley representatives about Claim 5. One of the objects of the reissue was to obtain claims that would not permit the deliberate and strained misconstruction that the Crosley representatives had placed upon Claim 5 during the said discussion. The Crosley representatives at that time maintained that the words referring to the tappet in Claim 5 referred to the lever. In the claims that were added by the reissue the terms were modified and qualified so that no such misconstruction could be made to seem plausible by even the most accomplished sophist.

The reissue oath [R. 761] states in the final paragraph on page 763 that he did not become aware of the defects in his original patent "until he undertook to license manufacturers under the patent." This refers to the conference with the Crosley attorneys. The facts regarding the reissue are all open and above-board, and appellee's efforts to make it appear that there was something irregular about the reissue are totally unjustified. Nothing whatever has been claimed in the reissue that appellant would not have been entitled to claim in the original patent. The

coaxial relationship between the tappet and the rocker which appellee claims was an afterthought brought into being by the Crosley device, was disclosed both in the drawings and wording of the original patent; in fact, the drawings showing this relationship were incorporated in the 1934 parent application from which the original of the present reissue patent was carved.

IV.

Re: Footnote 7 Appearing on Page 57 of the Foregoing Brief.

Appellant's Exhibit BBBB, which is a certified copy of the allowed Canadian application on the tuner here involved shows that Claims 7 to 11 thereof are identical to the claims bearing the same numbers in the reissue patent here involved and read as follows:

"7. In combination with the tuning mechanism of a radio apparatus, of a rotatable rocker mounted upon a shaft operatively connected with said mechanism, said rocker having two arms each extending on a different side of said shaft; means adjustably movable about a pivot and acting upon bodily movement in one direction to slidably engage either arm of said rocker and push it in one direction to an angular position at which the movement of said rocker is arrested by the collision of said means and the oppositely moving other arm of said rocker; and a spring for holding said means in a normally in-operative position; said rocker constructed so as to admit at least a portion of said means between said arms.

"8. The combination with the tuning mechanism of a radio apparatus, of a rotatable rocker mounted upon a shaft operatively connected with said mechanism, said rocker having two arms each extending on a different side

of said shaft; means adjustably movable about a pivot and acting upon bodily movement in one direction to slidably engage either arm of said rocker and push it in one direction to an angular position at which the movement of said rocker is arrested by the collision of said means and the oppositely moving other arm of said rocker; and a spring for holding said means in a normally inoperative position; the axis of said means being substantially co-axial with the axis of said rocker when said means is in engagement with both of said arms.

“9. In a mechanism for angularly positioning a control of a radio device, a combination including: a rotatable rocker comprising two shoulders lying on opposite sides of the axis of said rocker; and a manually movable operating means comprising an adjustably mounted positioning element adapted upon movement of said means in one direction to engage one shoulder of said rocker and rotate said rocker to a position at which the movement of said element is arrested by the collision of said element and the oppositely moving other shoulder of said rocker; said rocker constructed to permit at least a portion of said means to pass beyond a line connecting the points on said shoulders at which the shoulders are contacted by said means.

“10. In a mechanism for angularly positioning a control of a radio device, a combination including: a rotatable rocker comprising two shoulders lying on opposite sides of the axis of said rocker; a manually movable operating member; and a positioning element adjustably mounted on a pivot carried by said member; said element adapted upon movement of said member in one direction to engage one shoulder of said rocker and rotate said rocker to a position at which the movement of said rocker is arrested by the collision of said element and the oppositely moving

other shoulder of said rocker; the axis of said element and the axis of said rocker being substantially co-axial when said element is in engagement with both of said shoulders.

“11. In a mechanism for angularly positioning a control of a radio device, a combination including: a rotatable rocker comprising two arms lying on opposite sides of the axis of said rocker; a manually movable operating member; a positioning element adjustably mounted on a pivot carried by said member; said element adapted upon movement of said member in one direction to engage one arm of said rocker and rotate said rocker to a position at which the movement of said rocker is arrested by the collision of said element and the oppositely moving other arm of said rocker; said rocker having a recess between said arms so that the axis of said element and the axis of said rocker may be substantially coaxial when said element is in engagement with both of said arms; and means operable from the external end of said member for holding said element in adjusted position.”

The allowed Canadian application, like the original United States Patent No. 2,108,538, was a division of an earlier application showing several other tuners, but the Canadian divisional application was not filed until December 21, 1945, as shown on the first page of the specification as well as on the cover bearing the certification of the Canadian Patent Office. The divisional application was thus filed after this Honorable Court rendered its decision in the *Associated* case.

Appellant herein desired to verify by the Canadian Patent Office that the claims here at issue are for the same invention as for the original patent and he therefore included the present reissue claims in that original application. He desired further to show that the identical disclosure, con-

sisting of the same drawings and the same specifications, are alone sufficient to justify claims in which the manual operating member could be described in terms broad enough to include plungers. It was of course not necessary for him to show plungers in the specification to justify such claims because plungers were well known in the art. He therefore used the identical drawings of his original and reissue United States patents as the drawings for his Canadian application, and the entire description of the apparatus is identical to the specifications in these United States patents. So that it would be perfectly clear that the reference to the operating member in terms sufficiently broad to include plungers was not an inadvertence on the part of the Canadian Patent Office, a statement was incorporated in the next to the last paragraph of the specification, as mentioned in footnote 7 on page 57 of the foregoing brief, to show that Leishman intended the claims to be interpreted as covering any kind of an operating means, and a plunger was specifically mentioned. Appellant thus sought to demonstrate that a disclosure, including drawings identical to those here involved, was alone sufficient to justify claims intended to be construed as referring to any kind of an operating means whatsoever—whether lever, plunger, or some other device for transmitting motion to the tappet. The allowance of these Canadian claims under these circumstances is another proof, in addition to those mentioned in the foregoing brief, that such claims are not only for the same invention as the original patent but that they are entitled to be interpreted precisely as appellant has stated.

The Canadian Patent Office is thus in agreement with the United States Patent Office, the United States District Court for the Western District of Oklahoma, the Court of

Appeals for the Tenth Circuit, as well as Judge Harrison in the *Associated* case. They all realized that Leishman's invention had nothing to do with the operating means. While not ruling formally on the issue of infringement, Judge Harrison's opinion contained these statements (36 Fed. Supp. 804, 806): "It cannot be seriously denied that the accused device uses a rotatable rocker, adjustable tappet and when brought to rest the two parts are coaxial—the essential elements contained in the plaintiff's [Leishman's] structure." And three paragraphs later he further stressed this point, saying ". . . as I have stated before, it [the accused device] contained plaintiff's structure."

In view of all the new evidence on this point that was not before this Honorable Court in the *Associated Radio Condenser* cases, it is believed that this Honorable Court will now share the same opinion.

V.

Re: Defendant's Exhibit CCCC and the Statement of Mr. Libby Regarding the Equivalence of Plungers and Levers.

It was not known by appellant until the decision was rendered in the *United States v. General Instrument Corporation, Radio Condenser Company, et al.*, that Mr. A. D. T. Libby had an official connection with the *alter ego* concern which both of these companies own and authorized to handle their patent matters. The decision in that case shows Mr. Libby's official connection as mentioned in the foregoing rebuttal brief in the sentence just preceding footnote 12. Mr. Libby's "Statement under Rule 114" was filed with the United States Patent Office in an interference in which he sought to prevent the allowance of a

claim because it was unpatentable.¹ Mr. Libby explained that the reason it was unpatentable was that it read squarely upon the Marschalk device excepting that it called for a plunger instead of a lever. He showed on page 2 of his statement [Deft. Ex. CCCC] wherein each of the elements set forth in the claim were present in the Marschalk structure and that the only deviation called for was the substitution of a plunger for the lever shown in Marschalk. On page 3 he states:

“It has been common practice in the past to use a lever-type adjustment as in Marschalk, as well as the plunger-type adjustment as called for by the claim [the claim to which he was objecting in his statement].

“One of the very earliest patents on plunger adjustment is Marvin. Other plunger-type adjustments are illustrated by the patents of Bast and the British Freytag.”

The Marvin and Bast patents were cited in the foregoing brief as old examples of the use of plungers in this art.

On page 2 of Mr. Libby's statement he lists several prior art patents, including the patent here at issue, namely, the Leishman reissue Patent Re. 20,827.

On the last page of Mr. Libby's statement he argues to the effect that the substitution of the plunger for the

¹Mr. Libby's name was misspelled “Libbey” in the decision, but the initials were given in each case as “A. D. T.” and it is obvious that the person referred to in the decision is the one who wrote the “Statement under Rule 114” and who spells his own name “Libby.” This is also established by Plaintiff's Exhibit 4 in the instant case [R. 702]. This exhibit is a patent assigned to Condenser Development Corporation, the concern of which “Mr. Libbey” was Assistant Secretary” [R. 707], and the signature at the bottom of pages 702, 703, 704, 705 and 706 verifies that he spells his name “Libby.”

lever shown in the patent here at issue would be but the substitution of a mechanical equivalent. He said:

“As to the application of the Leishman patent, this is well expressed in Leishman’s argument in the DeJong application involved in this Interference (Leishman having purchased the DeJong application and taken over in person the prosecution thereof) in the following words:

“ ‘Claim 13 is differentiated from Leishman by only two words “plunger” and “longitudinally,” neither of which describe a patentable difference. If “longitudinally,” is omitted and “plunger” changed to *manual* it will read directly upon Leishman.’

“(See also Leishman’s argument in the DeJong file with respect to Vaselli patent 1,846,289.) A glance at the drawing will make the application obvious without further argument.”

Mr. Libby’s final statement that “a glance at the drawing [of the Leishman reissue patent] will make the application [of his argument regarding the equivalence of the plunger for the lever shown in this patent] obvious without further argument,” shows conclusively that Mr. Libby was well aware that the equivalence of plungers for levers in the operation of the tappet shown in the reissue patent is not a debatable matter.

It was stated in the foregoing brief that Mr. Libby’s colleague, Mr. James, specifically stated in a letter [Pltf. Ex. 1] that weights and springs are equivalents for moving the tappet up and that Mr. James was therefore obviously of the opinion that it was immaterial by what means the tappet is moved. We now have Mr. Libby stating specifically that a plunger and a lever are equivalents for this purpose.

No. 12,486

IN THE

**United States Court of Appeals
For the Ninth Circuit**

JOHN LEONARD McDOWELL,

Appellant,

VS.

E. B. SWOPE, Warden, United States
Penitentiary, Alcatraz, California,

Appellee.

BRIEF FOR APPELLEE.

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No. 12,486

IN THE
United States Court of Appeals
For the Ninth Circuit

JOHN LEONARD McDOWELL,

Appellant,

vs.

E. B. SWOPE, Warden, United States
Penitentiary, Alcatraz, California,

Appellee.

BRIEF FOR APPELLEE.

JURISDICTIONAL STATEMENT.

This is an appeal from an order of the United States District Court of the Northern District of California, hereinafter called "the Court below", denying appellant's petition for writ of habeas corpus (Tr. 23), and an appeal from an order of the Court below denying appellant's motion for rehearing. (Tr. 28.) The Court below had jurisdiction over the habeas corpus proceedings under Title 28 U.S.C.A., Sections 2241, 2243 and 2255. Jurisdiction to review the order of the Court below denying the petition is conferred upon this Honorable Court by Title 28 U.S. C.A., Section 2253.

STATEMENT OF THE CASE.

The appellant, an inmate of the United States Penitentiary at Alcatraz, California, filed a petition for writ of habeas corpus (Tr. 1-10), and the Court below issued an order to show cause. (Tr. 11-12.) Thereafter, the appellee filed a return to the order to show cause (Tr. 13-17), and the appellant filed a traverse to the return to the order to show cause. (Tr. 18-22.) The matter was then submitted, and the Court below filed the following order denying the petition for writ of habeas corpus and discharging the order to show cause:

"The petition for habeas corpus having been briefed and submitted for ruling and it being noted that the ground relied upon by petitioner was previously presented to this Court in *MacDowell v. Swope*, No. 28125H.

"IT IS ORDERED, on the authorities previously cited in the above case, that the petition be and the same hereby is DENIED and the order to show cause be and the same hereby is discharged.

"7 September 1949.

GEORGE B. HARRIS,
United States District Judge."

(Tr. 23.)

Thereafter, and on September 15, 1949, the appellant filed a motion for rehearing (Tr. 24-27), which the Court below likewise denied by the entry of the following order:

"The petition for re-hearing, having been submitted and considered for ruling,

"IT IS ORDERED that the petition be, and the same hereby is, DENIED.

"Dated: September 30, 1949.

GEORGE B. HARRIS,

United States District Judge."

(Tr. 28.)

From these orders appellant now appeals to this Honorable Court. (Tr. 32.)

FACTS OF THE CASE.

On March 16, 1945, appellant was indicted in the District Court for the Southern District of Indiana, in two counts, the first charging forcible entry into a Post Office with intent to commit larceny, 18 U.S.C. 315, and the second charging theft of Post Office property, 18 U.S.C. 313. (Tr. 87-88.) Before trial on this indictment appellant was, on June 7, 1945, convicted of violating the National Motor Vehicle Theft Act and of passing a forged money order, in the District Court for the District of Nebraska, sentenced to imprisonment for three years (Tr. 113-114), and shortly thereafter committed to Alcatraz Penitentiary. (Tr. 134-135.) On November 2, 1945, in compliance with his request for a speedy trial on the Indiana indictment, he was taken to Indianapolis, Indiana, pleaded not guilty, and the case was set for trial on November 29,

1945. (Tr. 96.) On November 23, 1945, he again appeared before the trial Court, with his Court appointed attorney, and asked leave to change his plea of guilty, and the Court permitted the plea to be changed. (Tr. 108.)

There followed a lengthy discussion as to the sentence to be imposed. It appeared that appellant had escaped from a State Prison in Michigan and still had fourteen years to serve on the State sentence. In view of the fact that both counts of the indictment arose out of the same transaction, and since the appellant still had a substantial period to serve on the Nebraska conviction, his counsel asked that he be given concurrent sentences on the two counts. (Tr. 115-120.) The Court then said:

“I think that five years is all right in this case, and I think that should run consecutively with the term he is now serving.” (Tr. 121.)

Considerable discussion ensued as to whether the sentence should also be made to run consecutively to the Michigan State sentence, since it appeared probable that the Michigan authorities had already filed a detainer at Alcatraz, and it was thought that the prison authorities might feel bound to honor that detainer first. (Tr. 121-122.) During the course of the discussion the Court said:

“You understand what the sentence is, five years to run consecutive with the sentence you are now serving, and also with the Michigan sentence * * * if it is necessary for him to serve that first,

and then would be consecutive. In other words, he would not be serving this five years at the same time he is serving Michigan.” (Tr. 124.)

Since appellant’s attorney expressed some doubt as to whether the sentence could be made to run after service of a State sentence, the exact form of the judgment entered was not decided upon at that time. (Tr. 124-125, 127.)

Three days later, and on November 26, 1945, appellant and his counsel again appeared before the Court, and the Court said:

“I had the Defendant called back into court in the case in which he was sentenced last Friday, the 23d, for fear there might be a misunderstanding as to the form of the judgment that is to be entered, insofar as the sentence which he is now serving in the Michigan term, the sentence which they are really expected to take him back to serve, and I am going to ask the clerk to read the judgment just as it is, and then see if you have any suggestion or if it is clearly understood. I think the kind of a judgment that we have prepared is just the form. Of course, the sentence was last Friday, and this is the judgment—say nothing about the Michigan case at all, because really he is not serving that now, and we don’t know when they will want him to serve it. So just make this cumulative with the sentence which he is now serving.” (Tr. 129.)

The Clerk then read the judgment (Tr. 129), and after some discussion the Court asked appellant

whether he understood the judgment the Clerk had read, and the appellant answered that he did. (Tr. 131.)

The judgment as entered made no distinction between the two counts, but imposed a general sentence of five years to begin at the expiration of the sentence appellant was then serving at Alcatraz. (Tr. 90-91.) No mention was made of the Michigan State sentence. No fines were assessed in addition to the prison term.*

On December 23, 1946, appellant filed with the sentencing Court of the Southern District of Indiana a motion to set aside the judgment as void (Tr. 96), on the grounds that sentence had never been orally pronounced by the Court, and that the judgment did not conform to the requirement of 18 U.S.C. 315 that *both* an imprisonment sentence *and* a fine be imposed. After a hearing, the motion was dismissed (Tr. 97-98), and the order was affirmed on January 21, 1948, by the Circuit Court of Appeals for the Seventh Circuit. (Tr. 98, 100-101.) Thereafter, the appellant filed a petition for writ of habeas corpus in the United States District Court for the Northern District of California, Southern Division, Civil No. 28125-H, and in these proceedings urged the contentions which he had unsuccessfully advanced before the sentencing Court in his motion to set aside the judgment. This petition was denied by the entry of the following order:

*18 U.S.C. 313 provides for a fine of not more than \$2000.00, or imprisonment for not more than three years, or both. 18 U.S.C. 315 provides for a fine of not more than \$1000.00 and imprisonment for not more than five years.

“The petition for writ of habeas corpus having been thoroughly briefed and submitted for ruling,

“IT IS ORDERED that the petition be and the same hereby is denied and the order to show cause be and the same hereby is discharged.

“Dated: August 6, 1948.

GEORGE B. HARRIS,
United States District Judge.

“*Bernstein v. United States*, 254 F. 967 (CCA 4), cer. denied, 249 U.S. 604;

“*Brown v. Johnston*, 91 F. 2d 370 (CCA 9), cer. denied, 302 U.S. 728;

“*Jordan v. United States*, 60 F. 2d 4, 5 (CCA 4), cer. denied, 287 U.S. 633;

“*Nancy v. United States*, 16 F. 2d 872 (CCA 9), cer. denied, *sub. nom.*”

(Tr. 143-144.)

In the instant habeas corpus proceedings appellant has abandoned his contention that the judgment was void because the sentencing Court failed to impose a fine in addition to imprisonment for his violation of 18 U.S.C. 315.

QUESTION.

Did the sentencing Court in fact impose a consecutive sentence?

CONTENTION OF APPELLEE.

The answer to the above stated question is: “Yes.”

ARGUMENT.

Appellant contends once more that at the proceedings on November 23, 1945, the Court merely indicated that it would eventually impose a five year sentence after it had determined when it should begin to run, and that the Court did not impose sentence on November 26, 1945, because the judgment was read by the Clerk. It is clear, however, that on November 23, 1945, the Court did not merely indicate, but specifically imposed, a sentence of five years to be served in addition to the federal sentence appellant was then serving and in addition to the Michigan State sentence, though leaving the sequence uncertain. There is considerable authority for the proposition that the time when the imprisonment is to begin is not a part of the sentence proper and the sentence is valid even though the time is omitted or indefinitely stated.

Bernstein v. United States, 254 F. 967 (CCA 4), certiorari denied, 249 U.S. 604;

United States ex rel. Brown v. Hill, 74 F. (2d) 822 (CCA 3);

United States v. Wright, 56 F. Supp. 489, 491 (E.D. Ill.);

Fels v. Snook, 30 F. (2d) 187 (N.D. Ga.).

Cf., however,

United States v. Dougherty, 269 U.S. 360;

Brown v. Johnston, 91 F. (2d) 370 (CCA 9), certiorari denied, 302 U.S. 728;

United States v. Patterson, 29 F. 775 (C.C. N.J.).

But even if no valid sentence was imposed on November 23, 1945, there can be no doubt that the proceedings on November 26, 1945, fulfilled all requirements. The sentence is simply the act by which, after conviction, the judge, from the bench and in the presence of the defendant, formally imposes punishment. There is no necessity for a verbatim oral pronouncement. Petitioner here clearly understood what punishment was being imposed and knew that it was the act of the judge. "The Constitution does not require that sentencing should be a game * * *." *Bozza v. United States*, 330 U.S. 160, 166.

In view of the foregoing, it is clear that the Indiana Court imposed a five year sentence to run consecutive to the three year sentence imposed by the Nebraska Court. The appellant, having forfeited 250 days' good time, has not as yet served his terms of imprisonment totaling eight years, which began to run on June 7, 1945 (Tr. 136), and accordingly he is not eligible for release from the custody of the appellee, and the petition for writ of habeas corpus was, therefore, properly denied, as was the petition for rehearing. *Zahn v. Hudspeth*, 102 F. (2d) 759 (CCA 10), cer. denied, 307 U. S. 642.

CONCLUSION.

It is, therefore, respectfully submitted that the decision of the Court below is correct and should be affirmed.

Dated, San Francisco, California,
May 12, 1950.

Respectfully submitted,

FRANK J. HENNESSY,

United States Attorney,

JOSEPH KARESH,

Assistant United States Attorney,

Attorneys for Appellee.

No. 12,489

IN THE

United States Court of Appeals
For the Ninth Circuit

ARTHUR NEWAGON,

Appellant,

vs.

E. B. SWOPE, Warden, United States
Penitentiary, Alcatraz, California,

Appellee.

BRIEF FOR APPELLEE.

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No. 12,489

IN THE

**United States Court of Appeals
For the Ninth Circuit**

ARTHUR NEWAGON,

Appellant,

vs.

E. B. SWOPE, Warden, United States
Penitentiary, Alcatraz, California,

Appellee.

BRIEF FOR APPELLEE.

JURISDICTIONAL STATEMENT.

This is an appeal from an order of the United States District Court for the Northern District of California, hereinafter called the "Court below", denying appellant's petition for writ of habeas corpus. (Tr. 60.) The Court below had jurisdiction over the habeas corpus proceedings under Title 28 U.S.C.A. Sections 2241, 2243 and 2255. Jurisdiction to review the order of the Court below denying the petition is conferred upon this Honorable Court by Title 28 U.S.C.A. Section 2253.

STATEMENT OF THE CASE.

The appellant, an inmate of the United States Penitentiary, at Alcatraz, California, filed a petition for writ of habeas corpus, in which he alleged, in substance, that his detention by the appellee, the warden of the said prison, is illegal because his counsel was not present at the time the jury returned its verdict convicting him of the crime of murder on an Indian Reservation. (Tr. 1-18.) Thereafter the Court below issued an order to show cause (Tr. 19), and the appellee filed a return to order to show cause. (Tr. 20-59.) The matter was submitted and the Court below filed the following order denying the petition for writ of habeas corpus:

“For the reason that there is no jurisdictional infirmity reachable by the writ of habeas corpus presented and upon the authority of *Lovvorn v. Johnston*, 9 Cir. 118 Fed. 2d 704, cert. den. 314 U.S. 607, the petition for the writ of habeas corpus is denied.

Dated: December 28, 1949.

Louis E. Goodman
United States District Judge.”

(Tr. 60.)

From this order appellant now appeals to this Honorable Court. (Tr. 64.)

QUESTION.

Does the complaint of appellant constitute a jurisdictional infirmity reachable by the writ of habeas corpus?

CONTENTION OF APPELLEE.

The answer to the above stated question is: No.

ARGUMENT.

In denying the petition for writ of habeas corpus the Court below did so upon authority of the decision of this Honorable Court in the case of

Lovvorn v. Johnston, 118 F. (2d) 704, certiorari denied, 314 U.S. 607.

Appellee herein asks this Honorable Court to affirm the order of the Court below upon authority of this same case.

In the *Lovvorn* case, supra, this Court held that the trial Court did not lose jurisdiction where counsel had absented himself at the time the verdict of guilty was returned against the defendant, even though such absence was without the consent of the Court or of the defendant.

See also,

Kent v. Sanford (CCA-5), 121 F. (2d) 216,
certiorari denied, 315 U.S. 799,

and

Altmayer v. Sanford (CCA-5), 148 F. (2d)
161,

on which appellee herein also relies, although, at the time the verdict was returned in the former case, counsel absented himself with the consent of the Court, and in the latter proceeding, before a general court-martial, civilian counsel absented himself with the consent of the defendant, while appointed military counsel remained in attendance.

Appellee knows of no decision squarely in point contrary to the rule enunciated by this Court in the *Lovvorn* case, *supra*, although in

Thomas v. Hunter (CCA-10), 153 F. (2d) 834, cited by appellant in his opening brief, there is a strong indication that failure of counsel to be present at the time the verdict was returned might be considered a jurisdictional defect cognizable in habeas corpus. For the ultimate result in this latter case, see

Thomas v. Hunter (CCA-10), 163 F. (2d) 1021,

and

Hunter v. Thomas (CCA-10), 173 F. (2d) 810.

Appellant also cites the decision of this Honorable Court in

Wilfong v. Johnston, 156 F. (2d) 507, but this case involved only the absence of counsel at the time sentence was pronounced. The *Wilfong* case, *supra*, therefore, can not and should not be construed as overruling the decision in the *Lovvorn* case, *supra*. Appellee earnestly asserts this proposition, particularly in view of the obvious difficulty that the Government would have if it were compelled at this late

date to re-try the appellant, who was convicted by a jury in 1934, and whose timely motion for a new trial on the same ground urged herein was denied by the trial Court. In this connection attention is called to the fact that no such difficulty befell the Government in the *Wilfong* case, *supra*, where the petitioner was remanded for re-imposition of sentence and for any proceedings which normally follow thereafter.

Appellant herein also relies on

Johnson v. Zerbst, 304 U.S. 458;

Powell v. Alabama, 287 U.S. 45;

Tomkins v. State of Missouri, 325 U.S. 485;

Williams v. Kaiser, 323 U.S. 471; and

Von Moltke v. Gillies, 332 U.S. 708.

Appellee, of course, has no quarrel with these decisions and leaves these cases with the passing observation that they, too, in nowise can be construed as overruling the decision of this Court in the *Lovvorn* case, *supra*, as can not Rule 44 of the Federal Rules of Criminal Procedure, also cited herein by the appellant.

In closing this argument, appellee observes that while the appellant claims he was only 14 years of age at the time he was convicted in 1934, the record of court commitment at Alcatraz, incorporated as an exhibit in the return to order to show cause (Tr. 58), shows that he was born in 1913, and thus was either 20 or 21 at the time he was convicted. But, whether appellant was 14, or 20, or 21 at that time, appellee believes, as the Court below found, on au-

thority of a decision of this Honorable Court, that the absence of counsel at the time the verdict was returned was not a jurisdictional infirmity cognizable in habeas corpus.

Thus, appellee asks this Honorable Court to reaffirm the position which it took in the case of *Lovvorn v. Johnston*, supra, a decision which, it goes without saying, was the correct and proper one.

CONCLUSION.

In view of the foregoing, it is respectfully urged that the decision of the Court below is correct and should be affirmed.

Dated, San Francisco, California,
April 26, 1950.

Respectfully submitted,

FRANK J. HENNESSY,

United States Attorney,

JOSEPH KARESH,

Assistant United States Attorney,

Attorneys for Appellee.

No. 12490

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

FRANCES LEON PARRISH,

Appellant,

vs.

ACACIA MUTUAL LIFE INSURANCE COMPANY, a corporation, *et al.* (Does),

Appellee.

APPELLEE'S BRIEF.

Upon Appeal From the District Court of the United States
for the Southern District of California,
Central Division

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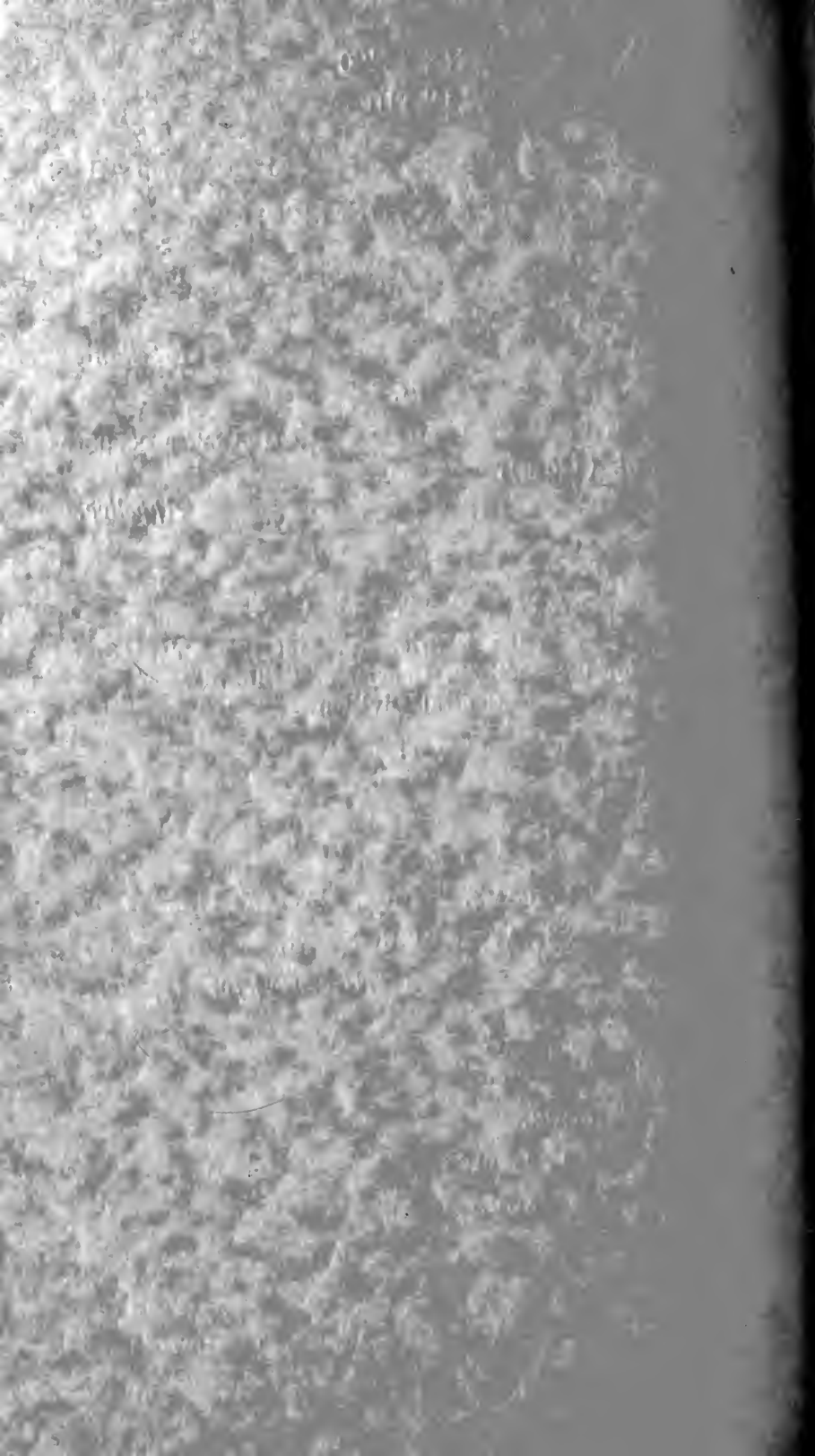
Of Counsel:

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A. ANDREW HAUKE.

FILED

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No. 12490

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

FRANCES LEON PARRISH,

Appellant,

vs.

ACACIA MUTUAL LIFE INSURANCE COMPANY, a corporation,
et al. (Does),

Appellee.

APPELLEE'S BRIEF.

Upon Appeal From the District Court of the United States
for the Southern District of California,
Central Division

Jurisdictional Statement.

This is an appeal by Frances Leon Parrish, plaintiff, from a final judgment against her in the District Court of the United States, Southern District of California, Central Division, entered January 18, 1950. Final judgment came upon defendant's motion to set aside verdict and for judgment in accordance with defendant's motion for a directed verdict and, in the alternative, for a new trial. Notice of Appeal was filed on January 24, 1950. [Tr. I, pp. 32-59.] Jurisdiction of the within appeal therefore exists in this Court under and by virtue of the provisions of Title 28, *United States Code*, Sections 1291 and 2107.

The within action was instituted by plaintiff in the Superior Court of the State of California in and for the County of Los Angeles. In her complaint plaintiff sought to recover the principal amount of ten thousand dollars (\$10,000.00) as beneficiary under a policy of insurance issued by defendant to her husband, Thomas Harry Parrish. It appearing from defendant's verified petition for removal of civil action that plaintiff was and is a citizen and resident of the State of California and that defendant was and is a corporation organized and existing under and by virtue of a charter granted to said defendant by the Congress of the United States, with its principal place of business in the City of Washington, District of Columbia, the action was removed to the District Court of the United States, Southern District of California, Central Division. [Tr. I, pp. 2-11.] Jurisdiction of the within action therefore existed in the District Court under and by virtue of the provisions of Title 28, United States Code, Section 1332(a)(1), 1332(b), 1441(a) and 1446(e).

Statement of the Case.

On October 4, 1946, Thomas Harry Parrish (hereinafter referred to as Mr. Parrish) completed and executed Part I of an application in writing to the Acacia Mutual Life Insurance Company (hereinafter referred to as Acacia Mutual) for issuance to him of a Ten-year Term policy of insurance upon his life, said policy to be in the face amount of ten thousand dollars (\$10,000.00) and to name as beneficiary Frances Leon Parrish, wife (hereinafter referred to as appellant). Thereafter, on October 17, 1946, Mr. Parrish completed and executed Part II of his application entitled "Answers Made to Medical Examiner in Conjunction with and Forming Part of Application for Insurance." [Defendant's Exhibits A and B.]

On October 25, 1946, Acacia Mutual executed and issued the policy applied for and on November 6, 1946, delivered the policy to Mr. Parrish, delivery being conditioned on the agreements contained in the Certificate of Continued Health and Contract Acceptance executed by Mr. Parrish at the time of delivery. [Defendant's Exhibit E.]

On February 8, 1948, Mr. Parrish died in Alhambra, California, from a heart condition the exact nature of which was not disclosed. Appellant provided due proof of death to Acacia Mutual and demanded payment of ten thousand dollars (\$10,000.00). After investigation, Acacia Mutual denied liability and refused to pay appellant the amount demanded or any amount other than a return of all premiums, taking the position that the policy of insurance issued and delivered by it was void from its inception and never had been of any force or effect as a contract of insurance because (a) its *issuance* had been induced by reliance upon Mr. Parrish's written application therefor, and in his application Mr. Parrish had misrepresented and concealed material facts which were within his knowledge concerning his prior medical history, symptoms, consultations with and treatment by physicians, despite specific inquiry as to such history, symptoms, consultations and treatments in said application; and (b) *delivery* of the contract had been induced by further misrepresentations and concealments of material facts with respect to his health and consultations with and treatment by physicians and surgeons during the period from the date of application to the date of delivery and, as a result, the conditions precedent to delivery contained in the Certificate of Continued Health and Contract Acceptance executed by Mr. Parrish on the date of delivery of the policy of insurance

had not been met and the consideration for the policy of insurance had failed.

After refusal of Acacia Mutual's tender of premiums received, appellant instituted this action and the matter ultimately came to trial before a jury in the District Court of the United States, Southern District of California, Central Division. Both plaintiff and defendant moved for a directed verdict at the close of the evidence and both motions were denied by the trial court. [Tr. II, pp. 230-234.] The jury returned a verdict for appellant and judgment was entered thereon. [Tr. I, pp. 29-31.] Acacia Mutual then moved to set aside the verdict and for judgment in accordance with its motion for directed verdict and, in the alternative, for a new trial. This motion was granted, judgment entered and the within appeal taken. [Tr. I, pp. 32-59.]

Acacia Mutual's rejection of appellant's demand, defense of this action, motion for directed verdict and motion to set aside verdict all are, either directly or indirectly, related to (a) the questions propounded to Mr. Parrish and the answers thereto made by Mr. Parrish in his written application for insurance, and (b) the agreements made by Mr. Parrish in the Certificate of Continued Health and Contract Acceptance at the time of delivery of the policy. It is, therefore, essential to a clear statement of this case to consider the medical history of Mr. Parrish not in the generalized fashion used in appellant's statement of the case but with particular reference to the direct and specific questions asked and the specific agreements signed—for it was under those circumstances that Mr. Parrish answered the questions and induced Acacia Mutual to issue the policy here sued upon.

The Application and the Misrepresentations and Concealments Therein.

The pertinent questions and answers contained in the application are:

“8. Have you ever had or been under treatment, observation, or diagnostic study by a physician, specialist, or other practitioner for any of the following? (These questions must be asked and answered with careful deliberation and consideration.) For each affirmative answer underline ailment and specify particulars in No. 12.

a. Heart disease or disorder of any kind, or symptom thereof such as heart weakness or pain, angina, palpitation, shortness of breath, dizziness, fainting spells, dropsy, disease of arteries, elevated blood pressure, varicose veins, etc. NO

b. Tuberculosis of lung or any other organ, or disease or disorder of lung or respiratory organs, such as spitting or raising of blood, prolonged or frequent cough or hoarseness, bronchitis, pleurisy, *pneumonia*, asthma, sinus trouble, etc. YES

c. Disease or disorder of stomach, intestines, any abdominal organ, duodenum or bowels; such as, gastric or duodenal ulcer, jaundice, gallstones, gallbladder disease, liver disease, appendicitis, dysentery, diarrhea, fistula, piles, rectal disease, rupture, indigestion, abdominal pains, etc. NO

9. When did you last consult a physician, specialist, or other practitioner? 1940

Give name and address of the one consulted and full particulars under 12. Dr. Wolf

10. Have you had any ailments, injuries, or diseases not stated above? If so, give full particulars under 12.

NO

12. State below the particulars of ALL diseases, injuries, ailments, or surgical operations which you have had or for which you have been under treatment, observation, or diagnostic study. Also give full particulars requested in questions 8, 9, 10 and 11 above.

Disease, Injury, Ailment or Surgical Operation	Date	No. of Attacks	Duration	Severity	Any remaining effects	Give names and addresses of attending physicians, specialists or practitioners consulted
Pneumonia	1905	1	2 weeks	mild	No	Don't remember
Acute cold	1940	1	1 week	mild	No	Dr. Wolf Ross-Loos Clinic, Los Angeles, Cal.

13. Have you consulted a physician, specialist, or other practitioner not stated above? Give name and address for each one consulted, date of consultation and particulars.	Name	Address	Date of consultation and particulars
	NO		

[Defendant's Exhibit B.]

Part II of the application for insurance also contained, above Mr. Parrish's signature, the following certification:

"It is hereby certified by the undersigned that the answers and statements made above are correctly and fully stated; that no material circumstance or information has been withheld or omitted concerning the past and present state of health, habits and occupation of proposed insured; and it is agreed that the above statements and answers shall be considered a basis for any policy that may be issued on the life of the proposed insured. If such statements and answers are submitted in connection with an application for re-

instatement of insurance, it is agreed that the company shall rely thereon in acting upon such application.

Signature of
Proposed insured T. H. Parrish.”

[Defendant's Exhibit B.]

Part I of the application for insurance contained, above Mr. Parrish's signature, the following agreements:

“It is hereby agreed as follows: (a) that unless otherwise indicated, all questions in Parts I and II of this application have reference to the proposed insured; (b) that all statements contained in Parts I and II hereof are full, complete and true and are offered to the Company as a consideration for any contract of insurance that may be issued in pursuance thereof; (c) that no agent shall have the right to make, alter, modify or discharge any contract issued on this application, or extend the time for payment of any premium due under such contract; (d) that notice to or knowledge of the soliciting agent or medical examiner is not notice to or knowledge of the Company, and that neither one of them is authorized to accept risks or to pass upon insurability; (e) that there shall be no contract of insurance until the policy shall have been issued by the Company and delivered by a duly authorized agent of the Company and the first premium paid thereon, all during the proposed insured's life and continuance in good health, provided, however, that if the first premium is tendered and a receipt issued on the attached binding

receipt form, the insurance shall take effect in accordance with the conditions of said binding receipt.

Dated at Compton, Calif.

this 4 day of October, 1946

Signature of

Proposed Insured Thomas Harry Parrish."

[Defendant's Exhibit A.]

At the trial it was established from uncontradicted evidence that the statements and representations contained in the answers of Mr. Parrish to questions 8, 9, 10, 12 and 13, as set forth above, were false and untrue and not fully and correctly stated in that, during the period from July 31, 1942, to the date of his application, he had had and had consulted and been under treatment, observation or diagnostic study by physicians or specialists on at least seventeen (17) separate occasions for one or another of the specific diseases, disorders or symptoms referred to in his application. The particular statements and representations together with the falsity and untruths therein which also constitute concealments are as follows:

1. *Representation:* That he had never had or been under treatment, observation, or diagnostic study by a physician, specialist or other practitioner for heart disease or disorder of any kind, or symptoms thereof such as heart weakness or pain, angina, palpitation, shortness of breath, dizziness, fainting spells, dropsy, disease of arteries, elevated blood pressure, varicose veins, etc. [Defendant's Exhibit B, question 8a and answer.]

False because he had had and had consulted and been under treatment, observation or diagnostic study for heart disease or disorder or one of the listed symptoms thereof by Dr. John C. Murrin on September 29, 1942, October 4, 1943, October 5, 1943, and August 22, 1945. [Defendant's Exhibit D; Tr. II, pp. 54-55, 58-68, 60, 62-67.]

2. *Representation:* That he had never had or been under treatment, observation or diagnostic study by a physician, specialist or other practitioner for tuberculosis of lung or any other organ, or disease or disorder of lung or respiratory organs such as spitting or raising of blood, prolonged or frequent cough or hoarseness, bronchitis, pleurisy, pneumonia, asthma, sinus trouble, etc., other than a mild attack of pneumonia in 1905. [Defendant's Exhibit B, question 8b and answer.]

False because he had had and had consulted and been under treatment, observation or diagnostic study for disease or disorder of the lungs or respiratory organs such as prolonged or frequent cough and bronchitis by Dr. Murrin on December 3, 1942, December 24, 1942, and September 8, 1943, by Dr. Leon Wolff on October 4, 1945, and November 27, 1945, and by Dr. Peter Hershey on September 5, 1946. [Defendant's Exhibit D; Tr. II, pp. 55-58, 114-115.]

3. *Representation:* That he had never had or been under treatment, observation, or diagnostic study by a physician, specialist or other practitioner for disease or disorder of stomach, intestines, any abdominal organ,

duodenum or bowels; such as gastric or duodenal ulcer, jaundice, gallstones, gallbladder disease, liver disease, appendicitis, dysentery, diarrhea, fistula, piles, rectal disease, rupture, indigestion, abdominal pains, etc. [Defendant's Exhibit B, question 8c and answer.]

False because he had had and had consulted and been under treatment, observation or diagnostic study for disease or disorder of stomach, intestines, an abdominal organ, duodenum or bowels, such as appendicitis, dysentery, diarrhea, indigestion, abdominal pains, etc., by Dr. Murrin on July 31, 1942, August 4, 1942, and August 22, 1945, Dr. Wolf on October 11, 1944, and December 18, 1944, and Dr. Louis Baltimore on December 21, 1944, Dr. Peter Hershey on October 30, 1946, and Dr. John H. Lloyd on November 4, 1946. [Defendant's Exhibit D, Tr. II, pp. 51-52, 52-54, 112-113, 102-106, 62, 31-32.]

4. *Representation:* That he had not consulted a physician, specialist or other practitioner since consulting a Dr. Wolf in 1940. [Defendant's Exhibit B, question 9 and answer.]

False because he had consulted at least five (5) physicians more than seventeen (17) times since consulting Dr. Wolf in 1940. [Defendant's Exhibit D.]

5. *Representation:* That he had not had any ailments, injuries or diseases other than those stated in said written application. [Defendant's Exhibit B, question 10 and answer.]

False because he had had ailments or diseases other than those stated in said written application on at least seventeen (17) occasions during the period 1942-1946. [Defendant's Exhibit D.]

6. *Representation:* That he had stated the particulars of all diseases, injuries, ailments or surgical operations which he had or for which he had been under treatment, observation or diagnostic study. [Defendant's Exhibit B, question 12 and answer.]

False because he had not stated the particulars of all diseases or ailments which he had had or for which he had been under treatment, observation or diagnostic study. [Defendant's Exhibit D.]

7. *Representation:* That he had not consulted any physician, specialist or other practitioner other than as stated in said application. [Defendant's Exhibit B, question 13 and answer.]

False because he had consulted at least five (5) physicians more than seventeen (17) times since consulting Dr. Wolf in 1940. [Defendant's Exhibit D.]

8. *Representation:* That the answers and statements made in the application were full, complete and true and correctly and fully stated. [Defendant's Exhibits A and B.]

False because the answers and statements made in the application were not full, complete and true and correctly and fully stated. [Defendant's Exhibit D.]

The Certificate of Continued Health and Contract Acceptance.

In addition to his application and pursuant to the agreement therein "that there shall be no contract of insurance until the policy shall have been issued by the Company and delivered by a duly authorized agent of the Company and the first premium paid thereon, all during the proposed insured's life and continuance in good health," Mr. Parrish, on November 6, 1946, the date of delivery of the policy sued upon, executed a Certificate of Continued Health and Contract Acceptance which reads as follows:

"Certificate of Continued Health and Contract Acceptance.

This will acknowledge delivery of Policy No. 648389, such delivery being based upon the following agreements: (1) that said insurance contract is accepted in the form and for the amount issued; (2) that the first premium on said insurance contract was tendered to the company during the continuance of good health of the proposed insured; and (3) that prior to the date said premium was tendered proposed insured, except as stated in the application for said insurance contract, had not been sick and had not consulted or been treated or attended by a physician.

The first premium was tendered on the 6th day of Nov. 1946.

Dated at Compton, Calif.	THOMAS H. PARRISH,
this 6 day of Nov., 1946	Signature of Insured."

[Defendant's Exhibit E.]

By his execution of this certificate Mr. Parrish stated and represented to Acacia Mutual (a) that prior to November 6, 1946, and except as stated in his application, he

had not been sick and had not consulted or been treated or attended by a physician and (b) that there had been no material change in his health during the period from the date of the application to the time of delivery of the policy.

It was established from uncontradicted evidence that, on October 30, 1946, a house call was made by Dr. Peter Hershey (the so-called "undisclosed" doctor referred to in Appellant's Brief [Cf. Defendant's Exhibit D]) at the home of Mr. Parrish; that on that date Mr. Parrish complained, among other things, of "aching in the stomach for four days"; that an examination was made; that there was tenderness to touch in the epigastrium and the abdominal walls were soft; that there was a tentative diagnosis made, tincture of belladonna was prescribed, and a complete blood study ordered; that a complete blood study was made which revealed, among other things, a white blood count of 19,900; that this white blood count was elevated to nearly twice the normal range of 6,000 to 10,000; that such a white blood count indicated a *severe infection* and was *definitely serious*; that he was referred to the surgery department of the Clinic in Los Angeles; that on November 4, 1946, he consulted Dr. Lloyd of the surgery department in Los Angeles; that at this time the pain was almost gone and there was tenderness only to deep pressure; that a diagnosis of acute appendix, now subsiding, was made and a soft diet prescribed; and that removal of the appendix was advised if there was any recurrence of the condition for which he had consulted these doctors. [Defendant's Exhibit D: Tr. II, p. 29, line 1, to p. 45, line 20; p. 93, line 3, to p. 95, line 17; p. 99, lines 21-23.]

Five days later Mr. Parrish signed the Certificate of Continued Health and Contract Acceptance above noted

and thus represented that, except as stated in his application, (1) he had not been sick and (2) had not consulted or been treated or attended by a physician. Concealed were the facts that there had been a material change in his health during the period from the date of application to the date of delivery and that he had consulted and been treated by two doctors for a serious and severe infection diagnosed by one of the doctors at least as an acute appendix. The evidence is undisputed that the policy would have been recalled had these facts been made known to Acacia Mutual [Tr. II, p. 162, line 14, to p. 164, line 10] and that the policy would not have been delivered if these facts had been made known to Acacia Mutual or to the delivering agent [Tr. II, p. 198, line 14, to p. 199, line 3], continuance in good health and full information with respect to all illnesses and all consultations with or treatments or attendances by physicians to the date of delivery of the policy being strict conditions precedent to such delivery.

Statement of Issues.

The questions involved in this appeal are:

1. Did the District Court err in granting defendant's motion to set aside verdict and for judgment?
2. Did the District Court err in denying plaintiff's motion for directed verdict?
3. Did the District Court err in granting defendant's motion for a new trial in the alternative?

Summary of Argument.

I.

The District Court did not err in granting defendant's motion to set aside verdict and for judgment. Under California law, the applicable law in this case, a false representation or a concealment of fact in an application for life insurance which is material to the risk insured against and which is relied upon by the other contracting party vitiates the contract irrespective of whether the false representation or concealment was intentional or unintentional. There is no question but that Mr. Parrish, the decedent insured, executed the application and did so as the basis and consideration for the insurance contract. Similarly there is no question but that the application contained misrepresentations and concealments of fact, particularly with respect to diseases or disorders of the heart or symptoms thereof, diseases or disorders of the lungs or respiratory organs and of the stomach or abdominal organs, and with respect to consultations with and treatments by physicians for such ailments.

These misrepresentations and concealments were material to the risk as a matter of law, and the evidence is uncontradicted that Acacia Mutual relied on them in issuing the policy of insurance.

Therefore Acacia Mutual completely established its defense and was entitled to judgment notwithstanding the verdict.

The same rules of law apply with respect to misrepresentations or concealments of material facts with respect to change in health or with respect to information sought in the application and coming to the attention of the applicant prior to delivery of the contract. Acacia Mutual

further established a complete defense by the uncontradicted evidence of material misrepresentations and concealments made by the applicant, Mr. Parrish, after the application and prior to delivery. The propriety of the District Court's order in granting defendant's motion to set aside verdict and for judgment is supported by these material misrepresentations and concealments made in the Certificate of Continued Health and Contract Acceptance, as well as by the ones made in the application.

II.

The District Court did not err in denying plaintiff's motion for directed verdict. Although plaintiff made out a *prima facie* case, nevertheless under the applicable California law this is insufficient to support a directed verdict for plaintiff in view of the fact that Acacia Mutual established its defense by the uncontradicted evidence and proved conclusively that Mr. Parrish, the applicant, misrepresented and concealed material facts within his knowledge which if known to Acacia Mutual would have caused it to refuse to issue or deliver the policy of insurance.

III.

The District Court did not err in granting defendant's motion for a new trial in the alternative and its order in this regard is not reviewable. The determination of whether a new trial should be granted calls for the judgment in the first instance of the trial judge who saw and heard the witnesses. Inasmuch as the verdict was contrary to the clear weight of the evidence, it is within the trial court's discretion to grant the new trial. Moreover, an order granting a new trial is interlocutory and not reviewable. Finally, the evidence was clearly insufficient to support a verdict for plaintiff. Therefore the granting of a new trial in the alternative was proper.

ARGUMENT.

I.

The District Court Did Not Err in Granting Defendant's Motion to Set Aside Verdict and for Judgment.

A. Under California Law, a False Representation or a Concealment of Fact in an Application for Insurance Which Is Material to the Risk Insured Against and Which Is Relied Upon by the Other Contracting Party Vitiates the Contract Irrespective of Whether the False Representation or Concealment Was Intentional or Unintentional.

Since the alleged contract of insurance here sued upon was applied for and delivered in California, the substantive law of California controls the issues on this appeal.

Title 28, *United States Code*, Sec. 1335;

Erie Railroad Company v. Tompkins (1938), 304 U. S. 64;

Gates v. General Casualty Company of America (C. C. A. 9th, 1941), 120 F. 2d 925, 926, 927.

It is well settled by a long and unbroken line of California Supreme Court and District Courts of Appeal decisions that a misrepresentation or concealment of a material fact, whether intentional or unintentional, in an application for life insurance which is relied upon by the insurer vitiates the contract of insurance.

Insurance Code, State of California, Secs. 331, 334, 358, 359, 360;

California Western States Life Ins. Co. v. Feinsten (1940), 15 Cal. 2d 413, 101 P. 2d 696;

Telford v. New York Life Ins. Co. (1937), 9 Cal. 2d 103, 69 P. 2d 835;

Whitney v. West Coast Life Ins. Co. (1918), 177 Cal. 74, 169 Pac. 997;

Iverson v. Metropolitan Life Ins. Co. (1907), 151 Cal. 746, 91 Pac. 609;

Pierre v. Metropolitan Life Ins. Co. (1937), 22 Cal. App. 2d 346, 70 P. 2d 985;

Maggini v. West Coast Life Ins. Co. (1934), 136 Cal. App. 472, 29 P. 2d 263;

Westphall v. Metropolitan Life Ins. Co. (1915), 27 Cal. App. 734, 151 Pac. 159.

In the case of *Telford v. New York Life Ins. Co.*, *supra*, the action sought to recover death benefits on a policy of insurance upon the life of plaintiff's deceased wife. The action was defended on the ground of misrepresentations and concealments avoiding the policy. A *prima facie* case was made by plaintiff introducing the policy of insurance and proving the death of the insured. Defendant then proved certain representations which were made in the application, and by uncontradicted evidence proved that such representations were false. Judgment was rendered for plaintiff, and on appeal to the Supreme Court of the State of California the judgment was reversed. In its opinion the Supreme Court stated as follows:

"A false representation or a concealment of fact whether intentional or unintentional, which is material to the risk vitiates the policy. The presence of an intent to deceive is not essential."

In the case of *Pierre v. Metropolitan Life Ins. Co.*, *supra*, the action was instituted by plaintiff to recover death benefits on a policy of insurance upon the life of her husband. The usual *prima facie* case was proven and the company defended on the ground of misrepresentations

and concealments. Judgment in the trial court was rendered in favor of plaintiff, and in reversing that judgment the District Court of Appeal stated as follows:

“Answers to questions in an application are generally considered to be material representations of fact, which if false will vitiate the contract (citing cases). . . . If the uncontradicted evidence shows that the insured, by false answers, misrepresented or concealed material facts, *the jury should have been instructed to find for appellant.*”

The other decisions above cited herein contain similar holdings and identical principles of law, and so well establish these principles as the law of the State of California as to admit of no doubt. Applying the law therein contained to the facts of our case, we find:

1. THERE WAS NO CONFLICT IN THE EVIDENCE OR ISSUE OF FACT FOR DETERMINATION BY THE JURY ON THE QUESTIONS OF (A) THE EXECUTION OF THE APPLICATION BY MR. PARRISH OR (B) THE PURPOSE OF THE APPLICATION.

Execution of Parts I and II of the application was admitted by appellant (App. Br. p. 4, lines 9-21) and was established in court by the testimony of appellant. [Tr. II, p. 17, lines 16-26.] Since the policy of insurance itself expressly provides it was issued “in consideration of the application” and since the application, over Mr. Parrish’s signature, further provides “that all statements contained in Parts I and II hereof are full, complete and true and are offered to the Company as a consideration for any contract of insurance that may be issued in pursuance thereof” and that “the above statements and answers shall be considered a basis for any policy that may be issued on the life of the proposed insured,” there is no question

but that the application by agreement was the basis and consideration for the alleged contract of insurance and that the statements and representations therein were made for the purpose of inducing Acacia Mutual to rely thereon in issuing the proposed contract. There is no evidence to the contrary.

2. THERE WAS NO CONFLICT IN THE EVIDENCE OR ISSUE OF FACT FOR DETERMINATION BY THE JURY AS TO WHETHER THE APPLICATION CONTAINED A MISREPRESENTATION OR CONCEALMENT OF FACT.

a. *Mr. Parrish's Misrepresentations and Concealments in His Answers to Question 8.*

By his answer to question 8a Mr. Parrish, presumably after careful deliberation and consideration, stated and represented to Acacia Mutual that he had *never* had or been under *treatment, observation or diagnostic study* by a physician for *heart disease or disorder* of any kind, or *symptoms thereof*, such as heart weakness or pain, palpitation, shortness of breath, dizziness, etc.

This statement and representation was false and was known by Mr. Parrish to be false, the uncontradicted evidence being that of more than seventeen (17) recorded consultations with physicians by him during the period 1942-1946, at least four (4) arose out of Mr. Parrish's specific complaints of disease or disorder of the heart, or symptoms thereof. These consultations were as follows:

- (1) On September 29, 1942, Mr. Parrish came to the offices of the Ross-Loos Clinic in Huntington Park, California, where he consulted Dr. John O. Murrin, M.D., and complained of "fluttery heart after retiring." He was examined by the doctor, had

medicine prescribed for him and was instructed to cut down cigarettes. [Tr. II, p. 54, line 7, to p. 55, line 7.]

- (2) On October 4, 1943, he again consulted Dr. Murrin and complained of a "cardiac pain—severe" and weakness in the knees. His heart was again examined, intravenous and oral medicine prescribed, and the decision reached to have an electrocardiogram if the symptoms complained of returned. [Tr. II, p. 58, line 15, to p. 68, line 1.]
- (3) On October 5, 1943, he returned to Dr. Murrin and complained, among other things, of "discomfort across the chest—like heartburn" and received heat treatment of the chest and a cough medicine. [Tr. II, p. 60, lines 2-13.]
- (4) On August 22, 1945, he again complained to Dr. Murrin of "cardiac aching toward the left shoulder blade." His heart was again examined but no electrocardiogram or orthodiagram was taken; amphogel was prescribed. [Tr. II, p. 62, line 13, to p. 67, line 21.]

By his answer to question 8b Mr. Parrish, again presumably after careful deliberation and consideration, stated and represented to Acacia Mutual that he had *never* had or been under *treatment, observation or diagnostic study* for a *disease or disorder of lung or respiratory organs* such as *prolonged or frequent cough or hoarseness, bronchitis, pleurisy, pneumonia, asthma, sinus trouble, etc.*, except for one mild attack of pneumonia in 1905.

This statement and representation was false and was known by Mr. Parrish to be false, the uncontradicted evi-

dence being that of the more than seventeen (17) recorded consultations with physicians by him during the period 1942-1946, at least six (6) arose out of Mr. Parrish's specific complaints of disease or disorder of lung or respiratory organs, including prolonged or frequent cough and bronchitis. These consultations were as follows:

- (1) On December 3, 1942, Mr. Parrish called on Dr. Murrin in Huntington Park and complained of a chest cold of two days' duration. [Tr. II, p. 55, lines 8-15.]
- (2) On December 24, 1942, he returned to Dr. Murrin and complained of a tight cough; he was examined, ammonium chloride, phenobarbital and a cough mixture were prescribed and a *diagnosis of bronchitis* made. [Tr. II, p. 55, line 22, to p. 56, line 25.]
- (3) On September 8, 1943, he again consulted Dr. Murrin for a chest cold of three days' duration which apparently persisted at least until October 5, 1943. [Tr. II, p. 57, line 18, to p. 58, line 4.]
- (4) On October 4, 1945, he consulted Dr. Leon Wolff, M.D., at the Ross-Loos Clinic in Huntington Park and complained of a bad cold and fever blisters. [Tr. II, p. 114, lines 1-17.]
- (5) He again consulted Dr. Wolff on November 27, 1945, for generalized aches and pains, fever and a non-productive cough; sulfadiazine treatment was prescribed and he was ordered to bed. [Tr. II, p. 114, line 18, to p. 115, line 4.]
- (6) On September 5, 1946, he consulted Dr. Peter Hershey for a hyperemic sore throat. [Defendant's Exhibit D.]

By his answer to question 8c Mr. Parrish, again presumably after careful deliberation and consideration, stated and represented to Acacia Mutual that he had *never* had or been under *treatment, observation or diagnostic study* for *disease or disorder of stomach, intestines, any abdominal organ, duodenum or bowels* such as appendicitis, dysentery, diarrhea, rectal disease, indigestion, abdominal pains, etc.

This statement and representation was false and was known by Mr. Parrish to be false, the uncontradicted evidence being that of the more than seventeen (17) recorded consultations with physicians by him during the period 1942-1946, at least six (6) prior to the application and two (2) before delivery of the policy arose out of Mr. Parrish's specific complaints of disease or disorder of stomach, intestines, abdominal organs, duodenum or bowels. These consultations were as follows:

- (1) On July 31, 1942, Mr. Parrish consulted Dr. Murrin and complained of "gas for 4-5 days." He was examined and an antacid was prescribed. [Tr. II, p. 51, line 3, to p. 52, line 24.]
- (2) Four days later he returned to Dr. Murrin and received infra-red treatment in the lumbar region; intravenous vitamin treatments were also prescribed, one injection being given on August 4, 1942, and additional injections given August 6, 10, 14, 19, 21, 26 and September 2, 4, 14 and 22, 1942. [Tr. II, p. 52, line 26, to p. 54, line 6.]
- (3) On October 11, 1944, Mr. Parrish consulted Dr. Leon Wolff, M.D., at the Ross-Loos Clinic in Huntington Park and complained of pain in the right side; the appendix area was found to be ten-

der and the condition diagnosed as acute enteritis which the doctor explained to be an attack of inflammation of the bowel. Heat was ordered and Mr. Parrish was placed on a diet; a stomach digestant was prescribed. [Tr. II, p. 112, line 18, to p. 113, line 10.]

- (4) On December 18, 1944, Mr. Parrish consulted Dr. Wolff again and complained of another similar attack. A gastro-intestinal series and a blood study were ordered by Dr. Wolff and a tentative diagnosis of chronic appendix made. [Tr. II, p. 113, lines 11-18; Defendant's Exhibit D.]
- (5) On December 21, 1944, a gastro-intestinal study was made by Dr. Louis Baltimore, M.D., and a white blood count taken. [Tr. II, p. 102, line 8, to p. 106, line 9.]
- (6) On August 22, 1945, Mr. Parrish visited Dr. Murrin and complained of heartburn and gas; amphogel was prescribed. [Tr. II, p. 62, lines 17-20.]

In addition to the misrepresentations and concealments contained in the application, it should also be noted that on October 30, 1946, subsequent to the date of signing the application but prior to the delivery of the policy and execution of his Certificate of Continued Health and Contract Acceptance, Mr. Parrish called Dr. Peter Hershey, M.D., to his residence and complained of aching in his stomach for four days. Examination at this time revealed tenderness to the touch in his epigastrium and soft abdominal muscles. A white blood count was taken which indicated a severe and serious infection somewhere in his system. On the basis of these complaints, symptoms, examinations and laboratory tests, Mr. Parrish was re-

ferred to surgery. On November 4, 1946, Mr. Parrish consulted Dr. John H. Lloyd, M.D., a surgeon connected with the Ross-Loos Clinic in Los Angeles, California. His condition was diagnosed by Dr. Lloyd as being an acute appendix, now subsiding; a soft diet was prescribed and removal of the appendix advised if there was any recurrence of these symptoms. [Tr. II, p. 31, line 6, to p. 32, line 7; Defendant's Exhibit D.]

b. *Mr. Parrish's Misrepresentations and Concealments in His Answer to Question 9.*

By his answer to question 9 Mr. Parrish stated and represented to Acacia Mutual that the last time he had consulted a physician, specialist or other practitioner was in 1940 when he had consulted a Dr. Wolf for an acute cold of mild severity and one week's duration.

This statement and representation was false and was known by Mr. Parrish to be false, the uncontradicted evidence being that, although Mr. Parrish told Acacia Mutual of his consultation with Dr. Wolf in 1940, he failed to tell Acacia Mutual of more than seventeen subsequent consultations with physicians during the period 1942 to the date of his application in 1946. [Defendant's Exhibit D.]

c. *Mr. Parrish's Misrepresentations and Concealments in His Answer to Question 10.*

By his answer to question 10 Mr. Parrish stated and represented to Acacia Mutual that he had had no ailments, injuries or diseases other than a mild attack of pneumonia in 1905 and an acute cold of one week's duration in 1940.

This statement and representation was false and was known by Mr. Parrish to be false, the uncontradicted

evidence being that he had had ailments or diseases other than those stated on July 31, 1942, August 4, 1942, September 29, 1942, December 3, 1942, December 24, 1942, September 8, 1943, October 4, 1943, October 5, 1943, October 11, 1944, December 18, 1944, December 21, 1944, August 22, 1945, October 4, 1945, November 27, 1945, September 5, 1946, October 30, 1946, and November 4, 1946. [Defendant's Exhibit D.] Appellant's contention that such illnesses as Mr. Parrish had on these dates could not be considered "ailments or diseases" is particularly remarkable when considered in the light of Mr. Parrish's own written statement in this answer that a light attack of pneumonia in 1905 and an acute cold in 1940 *were* ailments or diseases which he considered material and substantial enough to report.

d. *Mr. Parrish's Misrepresentations and Concealments in His Answer to Question 12.*

By his answer to question 12 Mr. Parrish stated and represented to Acacia Mutual that the full particulars of ALL diseases, injuries or ailments which he had had or for which he had been under treatment, observation or diagnostic study, including the full particulars with respect to all the matters covered in questions 8, 9 and 10, had been given to Acacia Mutual in his answer to question 12. This answer listed the previously noted mild attack of pneumonia in 1905 and an acute cold of mild severity for which he had consulted Dr. Wolf of the Ross-Loos Clinic in Los Angeles, California, in 1940.

This statement and representation was false and was known by Mr. Parrish to be false, the uncontradicted evidence being that he had not stated the full particulars with

respect to all the matters covered in questions 8, 9 and 10 and that he had had diseases or ailments other than those stated in his answer for which he had been under treatment, observation or diagnostic study on July 31, 1942, August 4, 1942, September 29, 1942, December 3, 1942, December 24, 1942, September 8, 1943, October 4, 1943, October 5, 1943, October 11, 1944, December 18, 1944, December 21, 1944, August 22, 1945, October 4, 1945, November 27, 1945, September 5, 1946, October 30, 1946, and November 4, 1946. [Defendant's Exhibit D.] Again it is pointed out that each of the above noted consultations was for ailments patently more serious than an acute cold and obviously more likely to be recalled by Mr. Parrish than treatment in 1905 and 1940.

e. *Mr. Parrish's Misrepresentations and Concealments in His Answer to Question 13.*

By his answer to question 13 Mr. Parrish stated and represented to Acacia Mutual that he had consulted no physician, specialist or other practitioner other than Dr. Wolf in 1940 for an acute cold of mild severity and a doctor whose name he did not remember for a mild attack of pneumonia in 1905.

This statement and representation was false and was known by Mr. Parrish to be false, the uncontradicted evidence being that he had consulted Dr. Murrin on July 31, 1942, August 4, 1942, September 29, 1942, December 3, 1942, December 24, 1942, September 8, 1943, October 4, 1943, October 5, 1943, August 22, 1945; Dr. Baltimore on December 21, 1944; Dr. Wolff on October 11, 1944, December 18, 1944, October 4, 1945, and November 27, 1945; Dr. Hershey on September 5, 1946, and October

30, 1946; and Dr. Lloyd on November 4, 1946. [Defendant's Exhibit D.]*

It is inconceivable that all of the above noted consultations, treatments, diagnostic studies, diseases, ailments and symptoms could have escaped the notice of Mr. Parrish under any circumstances. It is especially inconceivable that they should have escaped his notice in view of the fact that specific direct questions in his application repeatedly brought them to his attention. They were, of course, matters peculiarly within the knowledge of Mr. Parrish as between the contracting parties.

3. THE MISREPRESENTATIONS AND CONCEALMENTS CONTAINED IN MR. PARRISH'S APPLICATION WERE MATERIAL TO THE RISK AS A MATTER OF LAW.

The California Supreme Court, whose decisions are here controlling, has uniformly held that information specifically called for by questions in an application for life insurance is material as a matter of law.

Insurance Code, State of California, Secs. 331, 334, 360;

*The medical records submitted by appellee [Defendant's Exhibit D] show a total of some thirty-eight (38) visits by Mr. Parrish to the Ross-Loos Clinic. Twenty-one of these visits are not included either because the records indicate they may have been for trivial or inconsequential ailments or because the record is not clear as to the specific doctor consulted or that the visit related to matters covered by specific questions in the application or Certificate of Continued Health and Contract Acceptance. The dates of these twenty-one additional visits are: February 7, 1942, August 6, 1942, August 10, 1942, August 14, 1942, August 19, 1942, August 21, 1942, August 26, 1942, September 2, 1942, September 4, 1942, September 14, 1942, September 22, 1942, October 18, 1942, March 2, 1943, December 29, 1944, February 14, 1945, February 27, 1945, September 1, 1945, March 14, 1946, March 15, 1946, March 16, 1946, and March 18, 1946.

California Western States Life Ins. Co. v. Feinsten (1940), 15 Cal. 2d 413, 423, 101 P. 2d 696;

Telford v. New York Life Ins. Co. (1937), 9 Cal. 2d 103, 107, 69 P. 2d 835;

Iverson v. Metropolitan Life Ins. Co. (1907), 151 Cal. 746, 749, 91 Pac. 609;

Pierre v. Metropolitan Life Ins. Co. (1937), 22 Cal. App. 2d 346, 348, 350, 70 P. 2d 985;

Maggini v. West Coast Life Ins. Co. (1934), 136 Cal. App. 472, 475, 29 P. 2d 263;

McEwen v. New York Life Ins. Co. (1914), 23 Cal. App. 694, 139 Pac. 242.

In *California Western States Life Ins. Co. v. Feinsten*, *supra*, plaintiff insurer sued to cancel the disability provisions of a life insurance policy reinstated by defendant Feinsten on the basis of misrepresentations and concealments in an application very similar in the language of many of its questions—and answers—to the application made by Mr. Parrish. The California Supreme Court, in affirming the trial court's judgment in favor of the insurer, held as follows at pages 423 and 424:

“Appellants next contend that the representations made by the insured in the application form were not material representations in that the illness for which insured had received the several treatments in the fall of 1934, assertedly, was not of a substantial character and, consequently, that a failure on his part to disclose such illness did not constitute fraud. *However, a reading of the application shows that the insured was not questioned with respect to the gravity of the illness, if any, for which he had consulted a physician. The question presented was ‘Have you consulted a*

physician for any ailments since the above-numbered policy was issued? List below all details in regard thereto . . .’ That question merely called for information relating to simple matters of fact within the knowledge of the insured. It has been held that answers to written questions set forth in application forms relative to insurance are generally deemed material representations (citing cases); and that in the making of a false representation which is material to the risk the presence of an intent to deceive is not essential. (Citing cases.) (6) The materiality of a representation is to be determined ‘solely by the probable and reasonable influence of the facts upon the party to whom the communication is due, in forming his estimate of the disadvantages of the proposed contract, or in making his inquiries.’ (Ins. Code, sec. 334.)”

“Much of the medical evidence adduced by the insurance company in the present case was to the effect that the symptoms shown by the insured at the time he consulted Dr. Swezey in August, 1935, were possible indications of a heart condition such as the insured claimed to have been suffering from in June, 1936. Therefore, under the circumstances hereinbefore recited, it may not be said that the information which the insurer sought to obtain by the questions set forth in the application form was not material to the risk.”

In *Iverson v. Metropolitan Life Ins. Co.*, *supra*, the Supreme Court said at page 749:

“There can be no question but that the written answers in the application for insurance made by the insured in response to the questions asked him relative to whether he had ever had any of the diseases

specifically mentioned in the questions were material to the risk assumed by the respondent; that the contract of insurance was based on them and on the agreement of the insured that if *any* answer was untrue the policy to be issued thereon should be void."

In *Pierre v. Metropolitan Life Ins. Co.*, *supra*, defendant Metropolitan appealed from a judgment for plaintiff on the grounds that the trial court erred in denying its motion for a directed verdict. In reversing the judgment and thus holding the directed verdict should have been ordered, the court states at page 348:

"Answers to questions in an application are generally considered to be material representations of fact, which if false will vitiate the contract. (*Iverson, supra*; *Layton v. New York Life Ins. Co.*, 55 Cal. App. 202, 202 Pac. 958; *Maggini, supra*.) The wording of the question may be important in determining the falsity of the answer. The first question inquired as to a specified disease, while the others were asked concerning any ailment or disease. An answer to a question as to whether an applicant had ever had a specified disease is material and, if false, voids the policy."

In *Maggini v. West Coast Life, supra*, the misrepresentations arose out of the insured's answer to the questions "Have you ever consulted a physician or practitioner for or have you ever had symptoms pertaining to or disease of: . . . the lungs?" and "What physician or practitioner or any other person not named above have you consulted or been treated by within the last five years and for what illness or ailment?" The evidence showed that prior to making his application the insured had suffered from and been treated for shortness of

breath and acute bronchitis and had at one time been treated for pneumonia. Defendant's appeal was from the trial court's denial of its motions for directed verdict, for judgment notwithstanding the verdict and for a new trial. In reversing the trial court and ordering judgment for the company, the court said, at pages 475 and 476:

"The materiality of the representations cannot be doubted, these being in the form of written answers made to written questions which the parties themselves thus indicated they deemed material. (Citing cases.) Likewise there can be no controversy that these representations were relied upon by the insurer in issuing the policies. Evidence to this effect was received without objection as was also evidence that if the insurer had known that these representations were false the policies would not have been issued. There was no evidence to the contrary."

In *McEwen v. New York Life Ins. Co.*, 187 Cal. 144, 201 Pac. 577, the Supreme Court, in affirming the judgment of the trial court in which that court directed a verdict in favor of the defendant, stated:

"Since the evidence conclusively shows the answer to the question concerning 'illnesses, diseases and accidents' was untrue and, according to the law laid down for the guidance of the trial court, the truth or falsity of the answers was the determining factor and the only question to be submitted to the jury, it was proper for the judge to direct a verdict for defendant upon the theory that a material question had been falsely answered."

In an earlier appeal in this same case where the District Court of Appeal (42 Cal. App. 133) reversed a judgment

of the trial court denying the motion for new trial made by the insurer this additional language is found:

“The materiality of representations was a question of law for determination of the court and not the jury.

“It would be a violation of the legal rights of the company to take from it its acknowledged power, thus to make its opinion the standard of what is material, and to leave that point to the determination of a jury. (*Jefferies v. Economical, etc. Ins. Co.*, 22 Wall. 47 (22 L. ed. 833 . . .).)”

These principles have been followed by the Federal cases in this circuit.

Gates v. General Casualty Co. of America, 120 F. 2d 925 (C. C. A. 9th, 1941). (Citing the *Cal. Ins. Code* and the *Telford* and *Maggini* cases);

Strangio v. Consolidated Indemnity & Ins. Co., 66 F. 2d 336 (C. C. A. 9th, 1933). (Citing *Civ. Code*, Secs. 2562, 2563 and 2565, which are now *Ins. Code* Secs. 332, 333 and 334);

Smith v. Royal Ins. Co., 37 Fed. Supp. 841 (N. D. Cal., 1941). (Citing the *Telford* and *Feinsten* cases.)

A distinction has been recognized from time to time between questions calling for the *opinion* of the applicant which may be relative or comparative and *specific* questions calling for *specific* answers. Typical of such *opinion* questions are the ones in issue in *Willis v. Policy Holders Life Ins. Ass'n*, 12 Cal. App. 2d 659, 55 P. 2d 920, relied on so strongly by appellant. This type of question and, therefore, the *Wills* case itself are obviously distinguishable from the case at bar.

Appellant's brief has also referred to and apparently relies heavily upon a group of cases in California which hold in effect that there is no duty upon the insured to reveal consultations or visits to a physician for some feeling of trivial discomfort or temporary indisposition not affecting his general health, or to reveal general medical check ups where no specific complaint is involved, or to reveal a physical condition of which he has no knowledge. This group of cases consists of:

Poole v. Grand Circle W. O. W., 18 Cal. App. 457;
Travelers Ins. Co. v. Byers, 120 Cal. App. 473;
Byers v. Pacific Mutual Life Ins. Co., 133 Cal. App. 632-638.

Irrespective of whether these cases represent any present law in California, they particularly have no application here, in view of the fact that the evidence in this record shows a pattern or syndrome of symptoms and complaints and a continuous series of consultations and treatments for the specific diseases, disorders and symptoms specifically referred to in the application.

For example, in the *Poole* case above referred to the court simply held that failure to reveal visits to a physician for trivial discomforts or a temporary indisposition such as a vaginal examination, cold, or for the prescription for general tonic to give the insured a better appetite, need not be disclosed.

Again in the *Travelers* case above referred to, the evidence showed several visits to a physician and to the La Jolla Clinic, but there was no evidence whatsoever in the record as to the purpose of such visits or the nature of the complaints, if any, or diagnoses, if any, which were

made. In fact, the court states in its opinion that it did not appear from the record whether the visits or consultations were for an illness of the insured or in regard to an illness of some member of his family. Under the circumstances the court in that case very properly held that it could not *presume* that such consultations or hospitalizations at the clinic were for anything more than a temporary illness or perhaps for a mere physical examination.

Again in the *Pacific Mutual* case the record indicates that the insured entered the Scripps Clinic at La Jolla where he remained for one night for a "general check up," and that he was told by his physician that he could not find a thing wrong with him at that time, and he went home promptly. The court in that case, referring to the *Poole* case and *Travelers* case, again held that there is no duty on an insured to disclose a treatment or consultation or hospitalization which involves simply a general check up which revealed no illness or disease whatsoever.

The facts in the cases above referred to are surely a far cry from the record in the case at bar, wherein consultations and treatments are shown without contradiction to have taken place, and wherein such treatments were for the specific ailments referred to in the application for insurance, and wherein specific diagnoses had been made. It is also interesting to note that in each of the three cases above referred to there is no causal connection between the concealments and representations and the cause of death, while in the case at bar many of the specific cardiac symptoms and complaints which were concealed and misrepresented apparently resulted in the death of the insured from a heart attack.

Even, however, if every question in this application be considered an *opinion* question—an approach which can-

not be taken as to any of the questions asked Mr. Parrish—there still is no question of fact on the issue of materiality for presentation to the jury since the only and undisputed testimony found in this record as to the materiality of the misrepresentations and concealments is that they were material. The deposition of Allen Weisman, an officer and underwriter of Acacia Mutual, together with the deposition of Dr. Merwin Hummel, its assistant medical director, is the sole evidence concerning the materiality of the representations and is therefore the only evidence as to the probable or reasonable influence of the matters misrepresented and concealed upon Acacia Mutual. In that portion of Mr. Weisman's deposition, wherein he is questioned as to what effect knowledge of the misrepresentations and concealments in the application and Certificate of Continued Health and Contract Acceptance would have had on his decision to approve or disapprove Mr. Parrish's application, commencing with the answer to question 16 and continuing through the answer to question 26, the witness states in each answer "I would not have approved the application . . ." [Tr. II, pp. 139-157.] Although in some of his answers he states that he would have required further information as to the nature of the ailments or consultations or in some instances would have referred it to the medical department, the uncontradicted fact is that in every instance, without equivocation and categorically, *he states he would not have approved the application*. Without such approval the policy of course would not have issued. This testimony is confirmed by the deposition of Dr. Hummel. [Tr. II, pp. 184-185.]

In the great majority of the cases above cited the decisions of the California Supreme Court and District Courts of Appeal have been reached upon factual situations in-

volving misrepresentations with respect to one or two consultations or treatments by physicians or surgeons, the degree of "seriousness" of the ailment not being the test of materiality but rather the probable influence of the facts upon the party to whom the communication was due. A false answer to a specific question has been uniformly held fatal.

The rationale behind these holdings is particularly well stated in the leading Arizona Supreme Court case of *Illinois Bankers Life Association v. Theodore*, 47 Ariz. 327, 55 P. 2d 811. In this case the principal question was the materiality of a misrepresentation in the application as to habitual coughing. The court held the misrepresentation material as a matter of law, stating at page 327:

"It is urged by counsel for plaintiff that coughing, even of the nature described by these witnesses, may at times be produced by a comparatively harmless cause, such as excessive smoking or a minor weakness of the throat and that, therefore, the answer falls within the category of matters of opinion, where it is necessary that bad faith on the part of the applicant should be shown, and not matters of fact, where bad faith and intent to deceive are immaterial. We think counsel entirely misapprehends the nature and purpose of the question and of our ruling on the first appeal. It is not contended by defendants that habitual coughing is, *of itself*, a disease. The reason why the question is asked is not to ascertain the opinion or knowledge of the applicant in regard to the existence of any particular disease, but to reveal the facts to the insurer so that it, knowing their existence, may form an opinion in regard to the existence of the disease by a more careful examination of the applicant. Such being the purpose of and justification for

the question, it is immaterial whether the applicant *believes* that he has or has not any particular disease or whether he actually has it. If the coughing is of such a nature that it *might* reasonably be a symptom of one of the named diseases, the insurer is entitled to know the fact for its own protection. We are of the opinion that it was not necessary for the defendants to show that the deceased either knew or believed that his habitual cough was caused by one of the named diseases. It was sufficient to void the policy if he knew the cough was habitual in its nature, and so knowing, failed to reveal its existence in his application."

Similarly, the District Court in its opinion in the within action has concisely interpreted the rationale of the California cases by pointing out that, although many of Mr. Parrish's ailments were serious, some of the complaints for which he consulted physicians and received treatment might be classified as inconsequential *per se* but were not inconsequential in this instance since not only were they specifically asked about but the very symptoms denied were those which might have, if properly followed up and known to Acacia Mutual, indicated the very condition that ultimately caused death. Thus emphasized is the materiality of the information withheld.

Even if, solely for the purpose of argument, the somewhat fantastic conclusions and interpretations by plaintiff of the evidence be adopted to the effect that no single or by itself material misrepresentation can be found, there still remains the cumulative and over-all effect of the total number of misrepresentations and concealments by

Mr. Parrish to be considered. Businessmen such as Mr. Parrish do not take countless hours from their work and repeatedly drive long distances from their offices to secure medical assistance simply because it is available as part of a group medical insurance program. Nor do they in the normal course of events repeatedly complain of ailments, consult physicians and surgeons, restrict their diet, subject themselves to repeated tests and injections, purchase expensive medicines, restrict their personal pleasures—or die at the age of 48.

There is, then, here a pattern of complaints, symptoms, consultations, treatments, laboratory studies, diagnoses, prescriptions and recurrences that to the ordinary man, if not to a sympathetic jury, suggests but one thing—poor health. To an insurance company it represents even more, of course: a shorter life span and an uninsurable risk. Revelation of such a pattern to an insurance company may be and often is of substantially more materiality to the acceptance or rejection of an applicant than a history of a single, isolated, “serious” disease from which an applicant may have recovered. Concealment of such a pattern may be and often is, therefore, of substantially greater importance and materiality. For this reason are insurance applications designed to obtain the facts and not opinions; and for this reason, in addition to the specific misrepresentations and concealments, is the multiplicity and cumulative effect of the misrepresentations and concealments in Mr. Parrish’s application in itself material as a matter of law.

4. THERE WAS NO CONFLICT IN THE EVIDENCE OR ISSUE OF FACT FOR DETERMINATION BY JURY AS TO THE RELIANCE BY ACACIA MUTUAL ON THE STATEMENTS AND REPRESENTATIONS IN THE APPLICATION IN ISSUING THE ALLEGED CONTRACT OF INSURANCE.

Under the law of California it is presumed, as a matter of law, that an insurance company relied on the answers as written in an application for a life insurance policy.

Iverson v. Metropolitan Life Ins. Co., 151 Cal. 746,
91 Pac. 609;

Layton v. New York Life Ins. Co., 55 Cal. App.
202, 202 Pac. 958.

In the *Iverson* case the Supreme Court of the State of California said:

“There can be no question but that the written answers . . . were material to the risk assumed by respondent, *that the contract of insurance was based on them . . .*”

In *Layton v. New York Life Ins. Co.*, *supra*, the court stated at page 205:

“By the terms of the policy of insurance delivered to plaintiff’s husband, the policy itself and the application therefor, copy of which, including the questions and answers making up the medical examination, was attached to the policy, constituted the entire contract between the company and the insured. Layton over his own signature declared that he had carefully read each and all of the answers given to the medical examiner, that each was written as made by him, and

that each was full, complete and true. The statements contained in the application thereby became his solemn representations and of the same binding force upon him as though he had himself written them out in his own handwriting and signed them. (*Westphall v. Metropolitan Life Ins. Co.*, 27 Cal. App. 734, 738 (151 Pac. 159).) It needs no citation of authority to support the rule that misrepresentation or concealment of the facts relative to the health of those whose lives are insured are peculiarly fatal to contracts of life insurance, *because the companies necessarily rely upon the statements and acts of the insured in making the contracts.* (See *Equitable Life Assur. Soc. v. McElroy*, 83 Fed. 631 (28 C. C. A. 365); *Whitney v. West Coast Life Ins. Co.*, 177 Cal. 74, 80 (161 Pac. 997).)”

There was, however, no issue of fact for determination by the jury as to the reliance of Acacia Mutual on the application in this case, irrespective of the prevailing California law, since the undisputed and only evidence on that issue is the deposition testimony of Allen Weisman which was read into evidence. The deposition is quoted as follows:

“14 (Q) Did you rely upon the information relating to the prior health of the said Thomas Harry Parrish contained in Part II of said application, Exhibit ‘1’, when you approved said application?”

“14 (A) Yes, I did rely upon the information relating to the prior health of Thomas Harry Parrish contained in Part II of the application when I approved the application.” [Tr. II, p. 139.]

- B. Under California Law, a False Representation or a Concealment of a Material Fact With Respect to a Change in Health or With Respect to Information Asked for in the Application That Comes to the Knowledge of the Applicant After the Application and Before Delivery of the Contract and Payment of the First Premium Thereon Vitiates the Contract of Insurance.

Pierre v. Metropolitan Life Ins. Co., 22 Cal. App. 2d 346, 70 P. 2d 985;

Stipcich v. Metropolitan Life Ins. Co., 277 U. S. 311, 72 L. Ed. 895, 899 (certification from 9th C. C. A.);

New York Life Ins. Co. v. Gist (C. C. A. 9th, 1933), 63 F. 2d 732.

See also:

Subar v. New York Life Ins. Co. (C. C. A. 6th, 1932), 60 F. 2d 239;

Combs v. Equitable Life Ins. Co. of Iowa (C. C. A. 4th, 1941), 120 F. 2d 432;

Mass. Mut. Life Ins. Co. v. Cohen etc. Co. (C. C. A. 6th, 1948), 166 F. 2d 63;

Glickman v. New York Life Ins. Co. (Court of Appeals, New York), 50 N. E. 2d 538.

In the case of *Pierre v. Metropolitan Life Ins. Co.*, *supra*, the doctrine set forth above is clearly stated as the settled and prevailing law of the State of California, as follows:

“The insured was obligated to disclose to the insurer any material change in his physical condition which occurred in the period between the date of his application and the date of the policy’s delivery. (*Security Life Ins. Co. v. Booms*, 31 Cal. App. 119, 159 Pac. 1000.)”

In the case of *Stipcich v. Metropolitan Life Ins. Co.*, *supra*, the doctrine, which is followed without exception throughout the United States, is again stated as follows:

“Insurance policies are traditionally contracts *uberimae fidei* and a failure by the insured to disclose conditions affecting the risk, of which he is aware, makes the contract voidable at the insurer’s option. (Citing cases.) Concededly the modern practice of requiring the applicant for life insurance to answer questions prepared by the insurer has relaxed this rule to some extent, since information not asked for is presumably deemed immaterial. (Citing cases.)

“But the reason for the rule still obtains, and with added force, as to changes materially affecting the risk which come to the knowledge of the insured after the application and before delivery of the policy. For, even the most unsophisticated person must know that in answering the questionnaire and submitting it to the insurer he is furnishing the data on the basis of which the company will decide whether, by issuing a policy, it wishes to insure him. If, while the company deliberates, he discovers facts which make portions of his application no longer true, the most elementary spirit of fair dealing would seem to require him to make a full disclosure. If he fails to do so the company may, despite its acceptance of the application, decline to issue a policy, (citing cases), or if a policy has been issued, it has a valid defense to a suit upon it.”

The other cases hereinabove cited follow the rule as stated above and are factually identical to the case before this court with the exception that they relied in the main on the language contained in the application and did not have the additional and strengthening factor of the writ-

ten and executed Certificate of Continued Health and Contract Acceptance found here.

As previously noted, Mr. Parrish not only agreed in Part I of his application "that there shall be no contract of insurance until the policy shall have been issued by the company and delivered by a duly authorized agent of the company and the first premium paid thereon, all during the proposed insured's life and continuance in good health" but also stated and represented on November 6, 1946, in his written Certificate of Continued Health and Contract Acceptance "that the first premium on said insurance contract was tendered to the company during the continued good health of the proposed insured; and (3) that prior to the date said premium was tendered proposed insured except as stated in the application for said insurance contract had not been sick and had not consulted or been treated or attended by a physician."

The uncontradicted evidence supporting the contention of Acacia Mutual that Mr. Parrish (1) had suffered a material change of health during the period from the date of the application to the date of delivery of the policy and execution of the above noted Certificate and (2) had been sick and had consulted and been treated and attended by both a physician and a surgeon during this period has previously been brought to the attention of the court and therefore will not be here repeated. [Appellee's Statement of the Case; Defendant's Exhibit D; Tr. II, pp. 29-45, 93-95, 99.] The evidence is undisputed that delivery of the policy was based upon the statements and repre-

sentations contained in the above referred to Certificate and that the policy would have been recalled and would not have been delivered if the true facts had been made known to Acacia Mutual or to the delivering agent. [Tr. II, pp. 162-164, 198-199.]

It is submitted that, upon the basis of the material misrepresentations and concealments found in the Certificate of Continued Health alone, Acacia Mutual was entitled to its directed verdict and to its motion to set aside verdict and for judgment, and in the alternative, for a new trial.

In summary, we submit that, under the authority of *Mutual Life Ins. Co. of New York v. Morairty*, 178 F. 2d 470, 473, and the applicable California decisions, (a) since defendant by uncontradicted evidence established its defense (that Mr. Parrish had misrepresented and concealed material facts in his *application*) as a matter of law and was therefore entitled to a directed verdict or to a judgment notwithstanding the verdict; and (b) since defendant by uncontradicted evidence established its defense (that Mr. Parrish had misrepresented and concealed a material fact in his *Certificate of Continued Health and Contract Acceptance*) as a matter of law and was therefore entitled to a directed verdict or to a judgment notwithstanding the verdict, the District Court did not err in granting defendant's motion to set aside verdict and for judgment, and in the alternative for a new trial.

II.

The District Court Did Not Err in Denying Plaintiff's Motion for Directed Verdict.

Even the most cursory review of the facts of this case and the California law applicable thereto makes it apparent that the true question to be determined on this appeal is whether or not the appellee had established its defense (that Mr. Parrish had misrepresented or concealed material facts in his application or in his Certificate of Continued Health and Contract Acceptance) as a matter of law and was therefore entitled to a directed verdict or to a judgment notwithstanding the verdict. If appellee had so established its defense, then the District Court did not err in granting appellee's motion to set aside verdict and for judgment.

Mutual Life Ins. Co. of New York v. Morairty, supra.

See cases cited, Appellee's Brief I-A, *supra*.

Since, however, appellant has chosen to place the principal portion of what argument appellant has advanced under the heading "The Trial Court Erred in Denying Plaintiff's Motion for a Directed Verdict," the factual and legal presentation thereunder must be considered with relation to that issue as well as the *true* issue, despite the confusion created thereby and the obvious lack of weight and authority in appellant's argument as applied to either issue.

Appellant's apparent factual and legal argument is that the trial court erred in denying plaintiff's motion for a directed verdict because (a) plaintiff had established a *prima facie* case and was aided by presumptions as a matter of law; (b) the insured was not suffering

from any ailment or disease at the time he signed his application for insurance, and had not consulted a physician for any disease or ailment; and (c) from the time the insured signed the application to the time the policy of insurance was delivered, there was no material change in the physical condition of the insured. (Appellant's Brief, pp. i and ii.)

Considering appellant's argument in this order, the *prima facie* case made by plaintiff in the trial court, and referred to under Appellant's Point IA, consisted of the introduction into evidence of the policy and certain stipulations (not material here) with respect to the terms thereof, and proof of death and insurable interest.* [Tr. II, pp. 10-14.] It was, therefore, essentially identical in legal effect to the *prima facie* case made in *Telford v. New York Life Ins. Co.*, *supra*, *Whitney v. West Coast Life Ins. Co.*, *supra*, *Iverson v. Metropolitan Life Ins. Co.*, *supra*, *Pierre v. Metropolitan Life Ins. Co.*, *supra*, *Maggini v. West Coast Life Ins. Co.*, *supra*, *Westphall v. Metropolitan Life Ins. Co.*, *supra*, and *McEwen v. New York Life Ins. Co.*, *supra*, previously cited under Point I of this brief. In each of those cases not only was such a *prima facie* insufficient to obtain a directed verdict for plaintiff but in all of them it was insufficient to prevent a directed verdict or a reversal of judgment refusing directed verdict for the insurer.

*In addition to the *prima facie* case presented, appellant's negligible rebuttal evidence included records of examinations of Mr. Parrish made every two years by the Standard Oil Company to determine employability. [Plaintiff's Exhibit 3.] It is noted that no records of the Standard Oil Company during the crucial period 1942-1946 were introduced, even though the records submitted show that after 1940 an annual rather than biennial examination was required by the employer.

Insofar as the exaggerated presumptions claimed by appellant are concerned, it must be pointed out that of the fourteen cases cited and quoted by appellant in support of the existence of the presumptions as claimed (Appellant's Brief, pp. 24-32), not one single case is of any authority or assistance to this court in determining any of the issues herein, either because a remote factual situation was involved (fire insurance, automobile insurance, real estate agreement, partnership accounting) or because the law discussed was that of a foreign jurisdiction with different requirements than California (Washington, Massachusetts, Tennessee, District of Columbia) or because the legal issue presented to the court in the case was whether or not *intentional* misrepresentations—true fraud—had been made. As has been previously noted, in California misrepresentations or concealments in an application for life insurance will vitiate the contract whether made intentionally or unintentionally. (*Insurance Code*, State of California, Section 331; *Pierre v. Metropolitan Life Ins. Co.*, *supra*.) Most of these fourteen cases are distinguishable on two or more of the above noted grounds.

Appellant's Point IB and subpoints thereunder are apparently based on appellant's self-serving conclusion that a consideration of Mr. Parrish's medical history for the period 1942-1946, as revealed by the Ross-Loos Clinic records and by the various doctors who testified, only shows that he was never diagnosed, even tentatively, as having any illness, ailment or disease; never received any treatment except heat applications; never received any medication of any importance; at all times had a normal, healthy physical constitution; and only consulted the physicians who testified for mere indispositions and because the medical services were free. (Appellant's

Brief, p. 25.) Therefore the insured, says appellant, was not suffering from any ailment or disease at the time he signed his application for insurance and had not consulted a physician for any ailment or disease; and further, says appellant, from the time insured signed the application to the time the policy was delivered there was no material change in the physical condition of insured. (Appellant's Brief, pp. 32-67.)

Such a conglomeration of incorrect and unsupported factual and legal conclusions of course begs entirely the question of *whether or not Mr. Parrish gave false answers to specific questions in his application and misrepresented and concealed facts within his exclusive knowledge as between the contracting parties which, if known to Acacia Mutual, would have caused them to refuse the application.*

To state, however, that no diagnosis, not even a tentative one, was ever made is simply to ignore (1) the gastrointestinal ailment diagnosis made by Dr. Murrin on July 31 and August 4, 1942, (2) the bronchitis diagnosis made by Dr. Murrin on December 24, 1942, (3) the acute enteritis diagnosis made by Dr. Wolff on October 11, 1944, (4) the tentative diagnosis of chronic appendix made by Dr. Wolff on December 18, 1944, (5) the repeated cold and sore throat diagnoses made by Dr. Murrin on December 3, 1942, September 8, 1943, and October 3, 1943, by Dr. Wolff on October 4, 1945, and by Dr. Hershey on September 5, 1946, and (6) the subsiding acute appendix diagnosis made by Dr. Lloyd on November 4, 1946.

To state further that Mr. Parrish never received any treatment other than heat applications nor any medication of any importance again ignores treatment or advice received at each of the more than seventeen visits to

physicians and the uncounted prescriptions of sulfadiazine, phenobarbital, tincture of belladonna, amphogel and intravenous B-Complex injections as well as cough remedies and numerous other medicines, some of which under California law required a doctor's prescription to obtain, were costly, and were not provided by the clinic.

Further, to state that all examinations and laboratory tests showed a normal, healthy constitution is again simply to ignore examinations showing gastro-intestinal ailments and disorders, respiratory ailments and disorders, possible chronic appendix, pain in lower abdomen, tenderness to touch in epigastrium and acute appendix as well as laboratory tests showing a white blood count twice the normal.

Finally, to claim that "from the time the insured signed the application to the time the policy of insurance was delivered, there was no material change in the physical condition of the insured" is to ask this court to ignore both the precise language of Mr. Parrish's Certificate of Continued Health and Contract Acceptance and the medical testimony and records concerning the serious and severe ailment he suffered from during that period.

Since it was Mr. Parrish who either went to the doctors or called them to his home; since it was Mr. Parrish who suffered from and made the complaints noted in their records; and since it was Mr. Parrish who gave the blood for the blood count and paid for and swallowed the sulfadiazine, phenobarbital, tincture of belladonna, amphogel and other prescribed medicines and received the hypodermic for his B-Complex injections and the barium for his gastro-intestinal series, and gave up his cigarettes, and ate the diets ordered and wrote from Paso Robles to Los Angeles for refills of prescriptions, it is difficult

to conceive that he was, as argued by appellant, completely without knowledge of any of the matters which he failed to reveal in his answers to the specific questions in his application—particularly in view of the fact that he recollected so well a mild pneumonia attack when he was five years old and a mild acute cold in 1940.

Appellant's argument and all the authorities cited and quoted therein in support of that argument can thus only be classified as a desperate reliance on rhetoric in an effort to avoid the language of the specific questions in the application and *Mr. Parrish's own recorded interpretation of that language as shown by his answers to questions 8b, 9 and 12 of the application*. To determine what Mr. Parrish, as one of the contracting parties, understood the words "disease," "ailment," "disorder" and "consultation" to mean, it is not necessary to quote at length from and rely on the language in cases decided by this Circuit Court prior to *Erie Railroad Company v. Tompkins*, *supra*, or cases decided in 1883 and 1884 on the basis of New York and Pennsylvania law; nor is it necessary to look to cases in the First, Fifth and Sixth Circuits where the law before the courts was that of jurisdictions other than California which required that the misrepresentations be made with intent to deceive. Of little more value are California appellate decisions distinguishable on their facts because "opinion" questions were the important element or because of the peculiar wording of the question and answer in issue or the particular lack of knowledge of an illiterate or uninformed applicant; appellee and this Court also do not need lengthy quotes from cases such as *Travelers v. Byers*, 123 Cal. App. 473, 11 P. 2d 444, to ascertain that a failure to disclose facts of which the applicant is ignorant is not fatal. Here, such ignorance is not present for, as stated

above, it was Mr. Parrish who called on the doctors and told them his complaints and his symptoms and received and followed the treatment prescribed as a result of their various diagnoses. It is not necessary to refer to such cases because Mr. Parrish in his application tells us plainly that *to him* a mild attack of pneumonia at the age of five and a mild acute cold were “diseases,” “ailments” or “disorders,” and Mr. Parrish in his application tells us again plainly and clearly that *to him* visiting a doctor for a mild acute cold was a “consultation.” The fact that there had been more than seventeen consultations by Mr. Parrish with physicians for more serious diseases, ailments and disorders than those communicated was known exclusively to Mr. Parrish as between these parties and is undisputed, and the fact that such a pattern of continuing and recurrent complaints, consultations and treatments is of overwhelming importance to a life insurance company in determining whether or not a risk is acceptable cannot be disputed.

Appellee therefore submits again that the uncontradicted evidence in this record is that Mr. Parrish misrepresented and concealed material facts within his knowledge which if known to Acacia Mutual would have caused it to refuse to issue or deliver the policy here sued upon; that by such uncontradicted evidence appellee had under California law proved its defense as a matter of law and was therefore entitled to a directed verdict or to judgment notwithstanding the verdict; and that, *ipso facto*, the District Court did not err in denying plaintiff's motion for directed verdict.

III.

The District Court Did Not Err in Granting Defendant's Motion for New Trial, in the Alternative, and Its Order in This Regard Is Not Reviewable.

The major portion of Point II of Appellant's Brief (pp. 67-73) is devoted to the contention that the trial court erred in granting defendant's motion to set aside verdict and for judgment. We have heretofore thoroughly discussed this contention under Point I of this brief and, we submit, have completely answered it. Therefore we will confine our argument to what appear to be appellant's other contentions, namely, that the trial court erred in granting defendant's motion for new trial in the alternative; and that in any event if the order granting judgment notwithstanding the verdict is reversed, then the case should not be remanded to the District Court for a new trial because of the alleged sufficiency of the evidence to support the verdict which was set aside.

On review of a conditional order granting defendant's motion for new trial in the alternative, the appellate court must always take the view that the determination of whether a new trial should be granted, as well as whether judgment should be entered, calls for judgment in the first instance of the trial judge who saw and heard the witnesses.

Globe Liquor Co. v. San Roman, 332 U. S. 571, 574 (1948);

Montgomery Ward & Co. v. Duncan, 311 U. S. 243 (1940).

Further, in an appeal from such an order, made as here under Rule 50(b) of the Federal Rules of Civil Procedure (28 U. S. C. A. 723(c) addendum), there is a clear distinction between the power of the trial court, after setting aside the verdict, to enter judgment notwithstanding the verdict on the one hand, and its power to grant a new trial on the other. Two different and entirely distinct rules govern the trial court's admitted discretion in these respects. As stated by this Circuit, the rule governing the trial court's power to render a judgment notwithstanding the verdict is phrased in the question

“whether or not, under the applicable law, defendant has established the defense (that the insured made a misrepresentation of a material fact in his application) as a matter of law, and was therefore entitled to a directed verdict or to a judgment notwithstanding the verdict.”

Mutual Life Ins. Co. of N. Y. v. Morairty, 178 F. 2d 470, 473 (C. C. A. 9th, 1949).

New trials may be granted on a different basis, as is pointed out by Circuit Judge Parker in a leading case, *Garrison v. United States*, 62 F. 2d 41 (C. C. A. 4th, 1932), at page 42:

“Verdict may be set aside and new trial granted, when the verdict is contrary to the clear weight of the evidence, or whenever in the exercise of a sound discretion the trial judge thinks this action necessary to prevent a miscarriage of justice.”

Thus it is that an order granting a new trial because the verdict is contrary to the clear weight of the evidence will not be reversed on appeal.

Montgomery Ward & Co. v. Duncan, 311 U. S. 243, 251 (1940);

Marsh v. Illinois Cent. R. Co., 175 F. 2d 498 (C. C. A. 5th, 1949);

Childs v. Radzevich, 139 F. 2d 374 (App. D. C. 1943);

Hawkins v. Sims, 137 F. 2d 66 (C. C. A. 4th, 1943);

General American Life Ins. Co. v. Central Nat. Bank of Cleveland, 136 F. 2d 821 (C. C. A. 6th, 1943);

Rice v. Union Pac. R. Co., 82 Fed. Supp. 1002 (D. Neb. 1949);

Pistolesi v. Mass. Mut L. Ins. Co., 64 Fed. Supp. 427 (N. D. Cal. 1945).

See also additional cases collected in:

Barron & Holtzoff, *Federal Practice and Procedure* (1950), pp. 778-779.

From the summary of the evidence presented herein-above in appellee's statement of the case and argument thus far, it is evident that by every standard the verdict for plaintiff was contrary to the clear weight of the evidence. Consequently, even if the motion for new trial had been made in and of itself, and not in the alternative in connection with the motion for judgment notwithstanding the verdict, the trial court's order granting a new trial would necessarily be sustained.

But when, as in the case at bar, and as specifically sanctioned by Rule 50(b) of the Rules of Procedure, defendant moves for judgment notwithstanding the verdict and simultaneously moves for a new trial in the alternative, the trial court should decide both motions, making its order on the new trial motion conditional upon reversal of its decision on the motion for judgment notwithstanding the verdict.

Montgomery Ward & Co. v. Duncan, 311 U. S. 243, 253 (1940);

General American L. Ins. Co. v. Central Nat. Bank of Cleveland, 136 F. 2d 821 (C. C. A. 6th, 1943);

Moffett v. Arabian American Oil Co., 85 Fed. Supp. 174, 181 (S. D. N. Y. 1949);

Boulter v. Commercial Standard Ins. Co., 78 Fed. Supp. 895, 896 (N. D. Cal. 1948), rev'd on other grounds, 175 F. 2d 763;

Bopst v. Columbia Casualty Co., 37 Fed. Supp. 32, 35 (D. Md. 1941).

And when the trial court follows this "appropriate procedure" laid out by the Supreme Court in the *Montgomery Ward* case, as it did here, then on appeal from the order granting the judgment *non obstante veredicto* and from the order granting a new trial in the alternative, the trial court's disposition of the new trial motion is not reviewable because interlocutory. In the governing case, the Supreme Court has ruled as follows:

"Should the trial judge enter judgment n.o.v. and, in the alternative, grant a new trial on any

of the grounds assigned therefor, his disposition of the motion for a new trial would not ordinarily be reviewable, and only his action in entering judgment would be ground of appeal. If the judgment were reversed, the case, on remand, would be governed by the trial judge's award of a new trial."

Montgomery Ward & Co. v. Duncan, 311 U. S. 243, 254 (1940);

McIlvaine Patent Corp. v. Walgreen Co., 138 F. 2d 177, 180 (C. C. A. 7th, 1943);

Binder v. Commercial Travelers Mut. Acc. Assn., 165 F. 2d 896, 902-903 (C. C. A. 2d, 1948).

Appellant's contention that the trial court's order granting a new trial in the alternative was improper because of the alleged sufficiency of plaintiff's evidence has been covered at great length heretofore in this brief where we have pointed out that uncontradicted evidence of material misrepresentations established the defense as a matter of law. We do, however, advert to appellant's attempts to distinguish the *Morairty* case, attempts which serve only to emphasize the eminent propriety of the trial court's reliance upon this case as a governing precedent in the Ninth Circuit.

Appellant's Brief, pp. 71-73;

Mutual Life Ins. Co. of N. Y. v. Morairty, 178 F. 2d 470 (C. C. A. 9th, 1949);

Memorandum Opinion of District Court, Tr. I, pp. 51-52.

Fundamentally there is and can be absolutely no distinction between the *Morairty* case and the case at bar with respect to the ultimate question of law involved in the misrepresentations contained in the application. Paraphrasing the language of that case, at page 473:

“The principal question before us is whether or not, under the applicable California (there Arizona) law, appellee (there appellant) had established the defense (that the insured made a misrepresentation of a material fact in his application) as a matter of law, and was therefore entitled to a directed verdict or to a judgment notwithstanding the verdict.”

Similarly, while the facts in the two cases are not, and indeed could not be, identical, nevertheless the distinctions which appellant seeks to draw are in any rational comparison what have been aptly termed “distinctions without a difference.” As a matter of fact, detailed factual analysis of the two cases produces a summary which can lead only to the conclusion that the District Court in the case at bar decided as wisely and properly as did the Circuit Court in the *Morairty* case, as follows:

MORAIRTY CASE

CASE AT BAR

Measure:

Had a cold 6 years before in Good Samaritan Hospital. Consulted Dr. Bank 6 years before. X-ray revealed diverticuli.

Representations
and Conceal-
ment:

Had ulcers 6 years before. Had consulted Dr. Fahlen 11 years before and was confined in Good Samaritan. (Diagnosis was ulcers but X-ray revealed only diverticuli and Dr. Fahlen did not remember whether he informed Morairty of ulcer diagnosis.)

Consulted Dr. Woodman 10 years before. Symptoms, gas and pain in abdomen. Diagnosis, diverticuli. He was referred to Dr. Bank, and was suffering from a massive gastro-intestinal hemorrhage.

3 years before, suffered recurrence of bowel hemorrhage. Confined to St. Joseph's Hospital after consultation with Dr. Flynn. Blood transfusions. No

Had pneumonia 41 years before and had an acute cold 6 years before. Consulted Dr. Wolf, Ross-Loos Clinic

4 consultations with Dr. Murrin for fluttery heart, cardiac pain, discomfort across chest like heartburn, and cardiac aching toward left shoulder blade, all within 4 years prior to application.

3 consultations with Dr. Murrin for disorders in lungs, respiratory organs, including diagnosis of bronchitis. 2 consultations with Dr. Wolf and with Dr. Hershey for same symptoms and disorders. All these consultations within 4 years prior to application.

3 consultations with Dr. Murrin, 2 with Dr. Wolf, and 1 with Dr. Baltimore, for disorders of stomach and abdominal organs. Diagnoses of acute enteritis,

MORAIRTY CASE

diagnosis whether ulcers or diverticuli.

CASE AT BAR

inflammation of bowel, gastro-intestinal ailment, tentative chronic appendix, a white blood count two normal. All within 4 years prior to application.

Between signing of application and delivery of policy, and contrary to representations in Certificate of Continued Health and Contract Acceptance, consultation with Dr. Hershey and once with Dr. Lloyd. A severe and serious infection was indicated and the condition was diagnosed as subsiding acute appendix.

Contrary to representation the last time he consulted a physician was *not* in 1942 when he consulted Dr. W. for a cold, but he consulted physicians some 17 times between 1942 and 1946.

Similarly, the ailments and diseases which he had indicated were not disclosed.

MORAIRTY CASE

CASE AT BAR

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er:

Uncontradicted evidence of Chief Actuary and Chief Medical Director that risk would not have been accepted had company been informed of true facts concerning Morairty's medical history as revealed by the evidence.

ledge
e
ed:

He knew he had hemorrhages, saw the 3 doctors and was hospitalized, but he apparently did not know that he had any disease such as ulcers. He knew he had diverticuli.

al
ection
Death:

No causal connection between ulcers and diverticuli and gastro-intestinal disorders on the one hand, and death by cerebral concussion caused from a fall.

Uncontradicted evidence of Underwriter and Assistant Medical Director of the Company that application would not have been approved, policy would not have been issued, and policy would not have been delivered if Company had known of true facts concerning Parrish's medical history as revealed by the evidence.

He knew he had consulted the 5 doctors some 17 times. He knew he had and complained of the cardiac pains and symptoms indicated above, the lung and respiratory pains and symptoms, the stomach and abdominal organ pains and symptoms including acute enteritis and acute appendicitis.

Definite causal connection between death by heart attack and the various heart pains and symptoms.

From the above chart it is readily apparent that the misrepresentations and concealments in the case at bar were in any event equally as flagrant as those in the *Morairty* case. Additionally, however, and in contrast to the four undisclosed consultations in the *Morairty* case, there were some seventeen undisclosed consultations in the case at bar. In both cases the evidence of materiality and reliance was uncontradicted. Finally, while in the *Morairty* case there was no causal connection between misrepresented ailments and the death, unquestionably there *was* such a causal connection in the case at bar.

While appellant may contend that from a strictly medical point of view a gastro-intestinal hemorrhage is symptomatically more serious than a fluttery heart, cardiac pain, discomfort across chest like heartburn and cardiac aching toward the left shoulder blade; or acute enteritis, inflammation of the bowel, chronic and acute appendicitis, gastro-intestinal ailments and a twice-normal white blood count, this begs the question. The symptoms the insured suffered in the case at bar, and for which he sought medical consultation and treatment on some seventeen occasions, are all indications of disease, ailment and disorder and the insurance company was entitled to know about them in evaluating the risk.

Actually, and looking at the facts from the final or post-mortem point of view, the symptoms in the *Morairty* case did not ultimately affect the risk involved. The symptoms were of a gastro-intestinal nature and the death was caused by a cerebral concussion totally unconnected with the symptoms, whereas in the case at bar, the insured whose symptoms included heart and cardiac pains died of a heart attack.

It is therefore respectfully submitted that the District Court properly and in the due exercise of its discretion granted defendant's motion for new trial in the alternative, and its order in this regard is not reviewable.

Conclusion.

In conclusion, Acacia Mutual respectfully submits that the District Court did not err in granting appellee's motion for judgment and to set aside the verdict and in the alternative for a new trial, nor did it err in denying appellant's motion for a directed verdict. In the trial of the action Acacia Mutual established as a matter of law and without any conflict in the evidence that the insured had misrepresented and concealed numerous material facts relating to consultations, treatments, and diagnoses of diseases, ailments and disorders which were specifically referred to in the application for insurance and in the Certificate of Continued Health and Contract Acceptance. Since there was and is no conflict in the evidence on any of these matters there was no question of fact for the determination of the jury, and accordingly, as a matter of law appellee's motion was properly granted, appellant's properly denied, and the District Court's judgment should be affirmed.

Respectfully submitted,

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